

Uncovering Bypassed Pay in Central Oklahoma Using Statistical Analysis and Field Tests

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ABSTRACT

The Marginal Well Commission estimates that 64% of the total numbers of producing wells in Oklahoma are marginal or “stripper” wells. These wells account for 85% of oil, and 10% of gas production in the state. This fact highlights the importance of these wells, hence the need to extend the productive life of these mature wells or “Brownfields”.

The intent of this study is to develop a methodology to identify behind-pipe pay zones existing in the Oklahoma Brownfields along the Nemaha Ridge trend. We used historical production for wells located within a five county study area that included: Logan, Oklahoma, Cleveland, McClain and Garvin counties. The evaluation yielded possible bypassed reserves located in “shallow zones”, in particular the Cherokee formation.

The result of this study identifies and lists 1,470 wells with the potential for an additional 32 million barrels of oil in bypassed formations. At current oil prices, an additional \$2 billion of gross revenue could possibly be recovered from these bypassed pay zones. This information will be made available to pertinent operators through the Stripper Well Consortium.

The methodology was applied to evaluate the behind-pipe pay potential of the sixteen marginal wells in the Northwest Noble field as a case study. The case study identified behind pipe pay with possible additional reserves of about 1,800,000 STBO from the Cherokee formations. These un-tapped formations include the Red Fork, Bartlesville, and Skinner sands. Initial results of new behind-pipe recompletions carried out in some wells in the Northwest Noble field confirm the presence of significant additional bypassed reserves in this field, which is typical of other mature wells or “Brownfields” located within the five county study area.

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INTRODUCTION

Oil and gas is produced in marginal volumes from “stripper” wells. The Interstate Oil and Gas Compact Commission define marginal or “stripper” oil wells as oil wells producing a volume of 10 barrels of oil per day or less. Similarly, “stripper” gas wells are defined as gas wells producing 60 Mscf of gas per day or less. There are about 397,000 stripper oil wells in the United States with average daily production of 2.14 barrels of oil per day. With total production of around 310 million barrels of oil in 2004, marginal oil wells account for about 29 percent of the domestic oil production in the United States. Marginal gas wells represent about 8 percent of the total natural gas produced in the United States with production of about 1.0 Trillion cubic feet (Tcf) of gas in 2004 (Interstate Oil and Gas Compact Commission, 2005).

The Marginal Well Commission researched 48,250 marginal oil wells and 23,845 marginal gas wells in the state of Oklahoma in 2005. Marginal oil wells accounted for 67% of oil production in Oklahoma, while marginal gas wells accounted for 10% of the total gas production in the state. These statistics emphasize the importance of the stripper wells to oil and gas production in Oklahoma. New technology or methodologies of prospecting for new reserves that increases oil production and ultimate reserves benefits the oil industry in Oklahoma. Oil prices are at record highs and operators of marginal wells are seeking ways to improve the productive life of their wells. Tools are required that will assist in identifying bypassed zones and methods are needed to quantify the additional pay.

This research focuses on developing a methodology for identifying bypassed pay zones in marginal wells. It entails analyzing and evaluating the dataset of large numbers of wells, identifying drilling and producing trends existing within the study area, and informing the operators of wells that may contain additional pay zones. Many of the historical wells were drilled based on reports of success from adjacent operators in the area. While the original target zones proved to be successful and very good oil recovery was achieved from the wells, other pay zones in these fields may have been bypassed. This study aims to uncover these bypassed pay zones thereby reducing risk to local operators who are usually smaller independent companies.

The methodology was tested by evaluating the Northwest Noble field, Cleveland County, Oklahoma. The Northwest Noble field served as an ideal model because it is a typical “Brownfield” in Oklahoma. It consists of sixteen stripper oil wells run by a small operator with limited resources. The field is also located in an area that has a number of productive horizons, many of which have never been completed or produced. The results obtained from the evaluation of this field are discussed in this report and will serve as a model for other Brownfields within the study area.

EXECUTIVE SUMMARY

The Marginal Well Commission estimates that 64% of the total numbers of producing wells in Oklahoma are marginal or “stripper” wells. These wells account for 85% of oil, and 10% of gas production in the state. This fact highlights the importance of these wells, hence the need to extend the productive life of these mature wells or “Brownfields”.

The intent of this study is to develop a methodology to identify behind-pipe pay zones existing in the Oklahoma Brownfields along the Nemaha Ridge trend. The primary tool utilized for this screening is a Schlumberger process known as Moving Domain Analysis (MDA). MDA is specifically designed for the organization and interpretation of large oil and gas production data sets, but it has never been applied to a project of this nature. A five county area of Central Oklahoma was chosen for the project. These five counties: Logan, Oklahoma, Cleveland, McClain and Garvin; lie in a geological region known as the Nemaha Ridge. One of the unique characteristics of the region is that it contains an extremely large number of distinct formations that have proven capable of producing hydrocarbons in commercial quantities. Because of the large number of potentially productive formations, there is a high statistical probability that a certain percentage of the thousands of wells in the region will contain bypassed pay of which operators are not aware.

Analysis of the historical production datasets for the 14,000 wells located in the five county area of study was carried out using Moving Domain software and this enabled the investigation of historical drilling and producing trends occurring in these areas. The methodology developed in this study entails understanding the geology of the study area; grouping the wells based on their producing zones and locations, comparing groups of wells based on their production performance within a particular zone of interest, high-grading the performance of these wells, and identifying adjacent wells in which these productive zones have been by-passed. The evaluation yielded possible significant bypassed reserves located in “shallow zones”, particularly the Cherokee formation comprising of the Prue, Skinner, Osborne, Red Fork and Bartlesville sands.

The result of this study identifies and lists 1,470 wells with the potential for an additional 32 million barrels of oil in these bypassed formations in the five county area of study. A list of the active wells in each county identified with possible by-passed pay is presented in this report, while the spreadsheet accompanying this report contains a list of all the wells identified in each of the five counties. At current oil prices, an additional \$2 billion of gross revenue could possibly be recovered from these bypassed pay zones.

The methodology was applied to evaluate the behind-pipe pay potential of the sixteen marginal wells in the Northwest Noble field as a case study. This field lies more or less in the center of the study area. By first focusing MDA on a field of which we have “insider knowledge”, we were able to test the efficacy of the process and develop a methodology that will carry over to the larger study area. The study identified behind pipe pay zones in the deeper zones consisting of the Oil Creek and Viola, and also the shallow zones consisting of the Cherokee formations. The Cherokee formations in this field that include the Red Fork, Bartlesville, and Skinner sands had been previously un-tapped in this field as they were not the target zones. However, re-evaluation of these zones using appropriate water saturation model that accounts for the presence of shales in these sandstones yield possible additional reserves of about 1,800,000 STBO in this field. Initial results of new behind-pipe recompletions carried out in some wells in the Northwest Noble field confirm the presence of significant additional by-passed reserves in this field, which is typical of other mature wells or “Brownfields” located within the five county study area. The parameters utilized in quantifying the additional reserves in the Northwest Noble field is made available in the spreadsheet accompanying this report to other operators who are interested in re-evaluating the potential in their marginal wells. Also presented in this report is a range of tools known as Analysis Behind Casing tools available for any operator who wishes to re-evaluate his wells.

GEOLOGY OF THE STUDY AREA

The area of study is comprised of the five counties located in Central Oklahoma that include Logan, Oklahoma, Cleveland, McClain and Garvin counties (Figure 1). This large area contains about 14,000 wells, most of which are stripper wells with production rates of less than 10 barrels of oil per day.

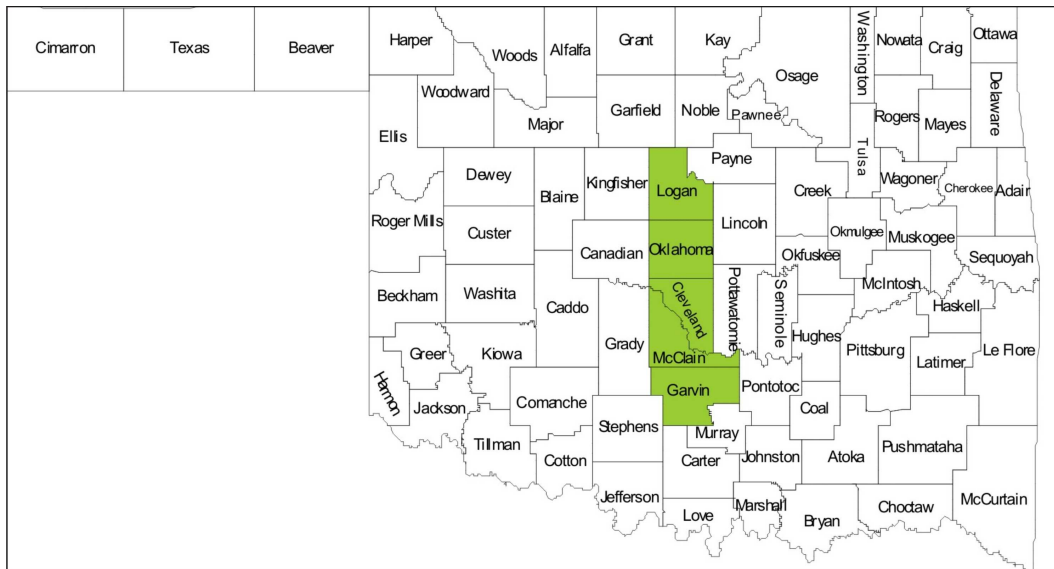


Figure 1 County map of Oklahoma showing area of study green-shaded

This area is a prolific oil producing region with total cumulative production of around 2.3 billion barrels of oil over the past 40 years. The geology within this area is well documented as many extensive studies have been performed on the formations and structures within these counties. The major regional tectonic pattern in Oklahoma is shown in Figure 2.

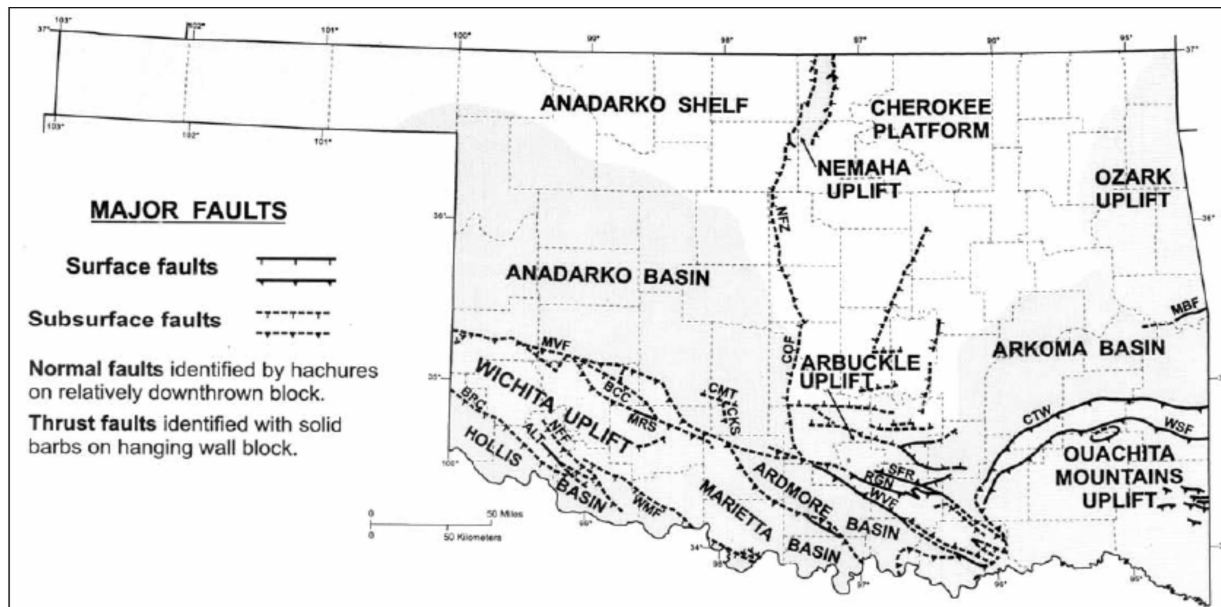


Figure 2 Geologic Provinces in Oklahoma (from Campbell et al., 1998)

The study area is located within a zone of transition involving five major tectonic elements that include: the Central Oklahoma (Cherokee) Platform, the McClain County Fault Zone, the Oklahoma City Uplift (Nemaha Ridge), the Arkoma (McAlester) basin, and the Anadarko basin (Albano, 1973).

The Nemaha Ridge or anticline is a major structural element extending southward from Nebraska across Kansas into Central Oklahoma (Albano, 1973). This ridge is characterized by shallow Precambrian crystalline rocks along its axis and by faulting along its eastern side. Its southern end appears to terminate in the Oklahoma City uplift. These structures were primarily the result of extensive folding and faulting that deformed much of southern Oklahoma (Wichita Orogeny) in Late Morrowan time (Huffman, 1959). Uplift of the ridge resulted in the erosion of the crest of the Oklahoma City dome down to beds as old as the Arbuckle Group (Cambro-Ordovician). The Nemaha Ridge forms the axis of a broader feature—the Central Oklahoma Segment (Ham, 1969) which extends southward into the Lawrence uplift.

The geology was observed to be fairly consistent over the entire five county region. The typical stratigraphic section for the five counties is shown in Figure 3. The formations listed in Figure 3 are typically present within the area of study. However, it was observed that some formations particularly those within the Pennsylvanian system were given different names depending on the location or county. This is due to the fact that geologic names of formations change from northern to southern Oklahoma. While the rocks of Cambrian and Ordovician ages were present and consistently recorded with the same names. Most of the rocks of Mississippian age were absent in some areas. The Pennsylvanian age rocks are grouped differently based on their location. These inconsistencies presented a challenge for the study. This challenge was overcome by first correlating the different formation names as they exist within the database, and then classifying them into three major groups that include: the upper, shallow, and deep formations. This grouping will be explained in more detail later in the report.

It has been observed from the recorded production history that a bulk of the oil production has occurred from the “Deep” formations consisting of the Viola, Simpson-Bromide sands, Tulip Creek, McLish, Oil Creek, Joins, and Arbuckle. However, a number of new completions were successful when perforated in the shallow formations of the Pennsylvanian consisting of the Cherokee formations: Prue, Skinner, Red Fork, and Bartlesville sands; Deese, Hoxbar and Cisco.

These shallow formations have been noted by geologists to be channel sands that consist of thin bedded sandstones laminated with shale and conductive minerals such as pyrite. The presence of pyrite usually causes low resistivity log readings; hence false interpretations of high water saturation values in these formations. This may explain why the shallow formations have been not been opened and produced in many of the wells in the study area. A typical electric log for these counties is shown in Figure 4.

SYS	SERIES	GROUP	UNIT	SANDSTONE	CARBONATE	EQUIVALENT
PENNSYLVANIAN	VIRGILIAN	Shawnee/Cisco	Topoka Ls Pawhuska Ls Hoover Ss Elgin Sd Oread Ls Heebner Sh Endicott Ss	Hoover Endicott	Pawhuska Oread Ls	
		Douglas/Cisco	Lovell Ls Haskell Ls Tonkawa Ss	Tonkawa	Douglas Group	
	MISSOURIAN	Lansing/Hoxbar	Avant Ls Cottage Grove Ss	Cottage Grove	Lansing Group	
		Kansas City/Hoxbar	Dewey Ls Hogshooter Ls Layton Ss Checkerboard Ls Cleveland Ss	Layton Cleveland Culp	Kansas City Group Melton	Marchand Upper Marchand Lower
	DES MOINESIAN	Marmaton	Big Lime Oswego		Big Lime Oswego	Marmaton Wash
		Cherokee	Cherokee Marker Prue Ss Verdigris Ls S Skinner Ss Pink Ls Red Fork Ss Inola Ls Mona	Prue S Skinner Red Fork Cherokee Wash Middle Cherokee Wash Lower/ Mona	Verdigris Pink Inola	Prue Wash S Skinner Wash Red Fork Wash Bartlesville, Tussey
	ATOKAN	Atoka	Atoka 13 Finger Ls	Atoka	Atoka 13 Finger	
	MORROWAN	Morrow	Morrow Primrose	Upper Morrow Morrow Lower Morrow Primrose		
	SPRINGERAN	Springer	Cunningham Britt Boatwright	Cunningham Britt Boatwright	Britt Boatwright	
	CHESTERIAN	Chester	Chester Ls		Chester	
Manning		Manning Ls		Manning		
MERAMECIAN	Meramec	Meramec Chat Meramec Ls		Meramec Chat Meramec		
OSAGEAN	Osage	Osage Ls				
KINDERHOOKIAN	Kinderhook	Kinderhook Sh				
CHATTANOOGIAN		Woodford Sh Misener Ss	Misener			
ULSTERIAN	Hunton	Hunton Group		Hunton (Frisco) Hunton (Bois d'Arc) Hunton (Haragan) Hunton (Henryhouse) Hunton (Chimney Hill) Maquoketa		
						NIAGARAN ALEXANDRIAN
CINCINNATIAN	Sylvan	Sylvan Sh Maquoketa				
CHAMPLAINIAN	Viola	Viola Group		Viola (Fernvale) Viola (Trenton)		
	Simpson	Simpson Dense Bromide Ss Tulip Creek Ss McLish Ss Oil Creek Ss Joins	Bromide Tulip Creek McLish Oil Creek Joins			
CANADIAN	Arbuckle	Arbuckle Group		Arbuckle		
CROIXAN						

Figure 3 Typical stratigraphic section for Central Oklahoma (Hendrickson et al, 1996)

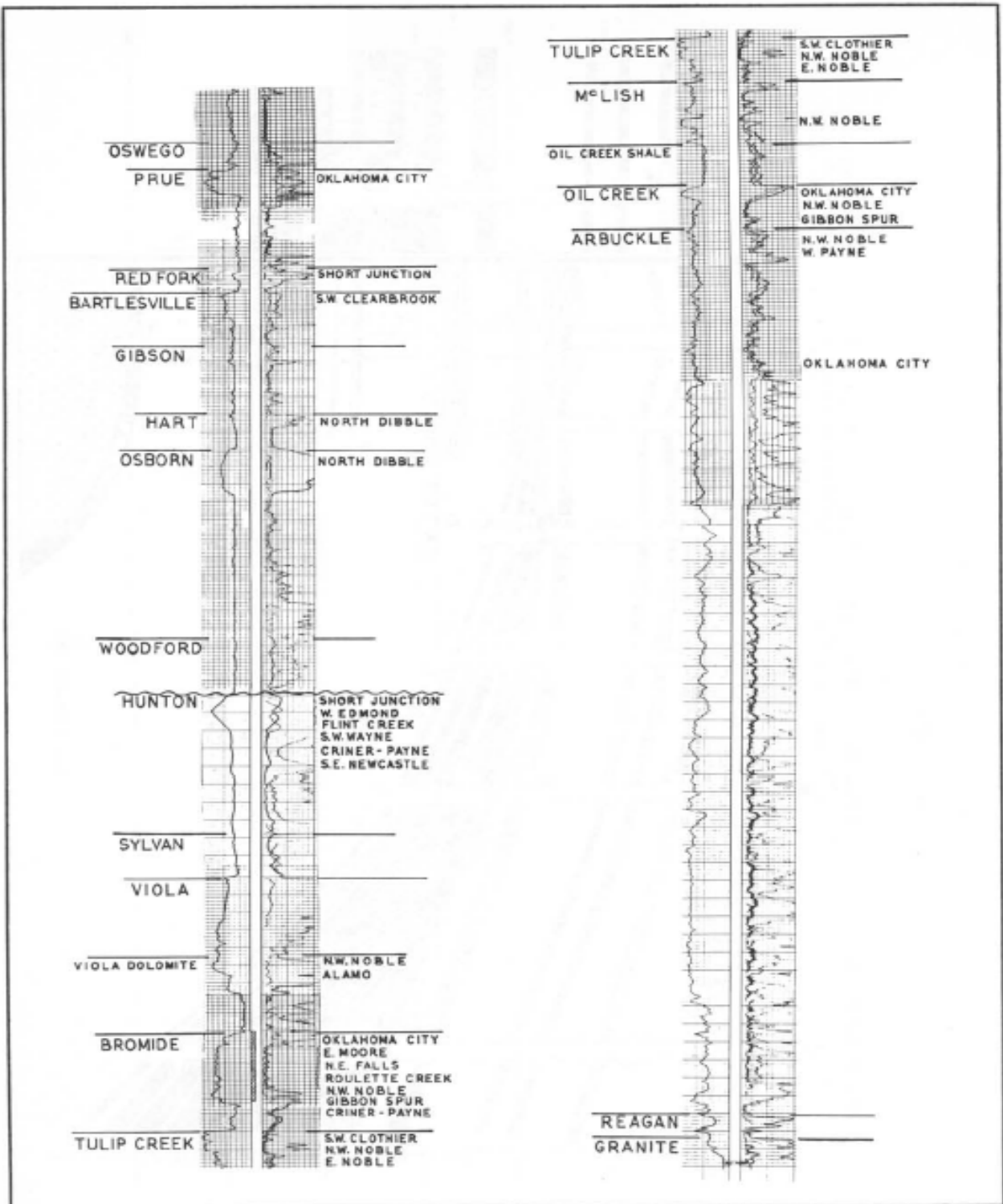


Figure 4 Typical Log showing existing formations in the Northwest Noble Field (L. Gatewood, 1966)

EXPERIMENTAL

This study did not entail carrying out any experimental work. A methodology was developed for identifying bypassed pay zones in marginal wells employing statistical and data analysis of large production data sets for these wells. The methodology developed for carrying out this study is discussed in the next section.

METHODOLOGY

Wells drilled and completed in Brownfields have extended production data which serves as an important source of information for re-evaluating the productive potential of the marginal wells. These huge datasets can be analyzed using computer software to make comparisons between wells and identify possible intervals of by-passed pay.

The production and completion data for the study area were obtained from IHS Energy and DrillingINFO™. The data included histories for each well that included producing formations, annual production, monthly production, operator, and location.

Analysis of the datasets was carried out using Moving Domain software, which enabled the investigation of historical drilling and producing trends of large areas with a large numbers wells. The Moving Domain Analysis technique used in this study entails understanding the geology of the study area which has been previously discussed. We compared groups of wells based on the production performance of the wells, then high-graded the performance of the wells, and screened the wells to determine any by-passed pay zones. This methodology has been successfully applied and utilized in determining possible infill drilling potential, completion optimization, stimulation evaluation, and predictions of future production. Employing Moving Domain Analysis as a tool for prospecting bypassed reserves in marginal wells is a new and novel application. The workflow employed in this methodology is shown in Figure 5.

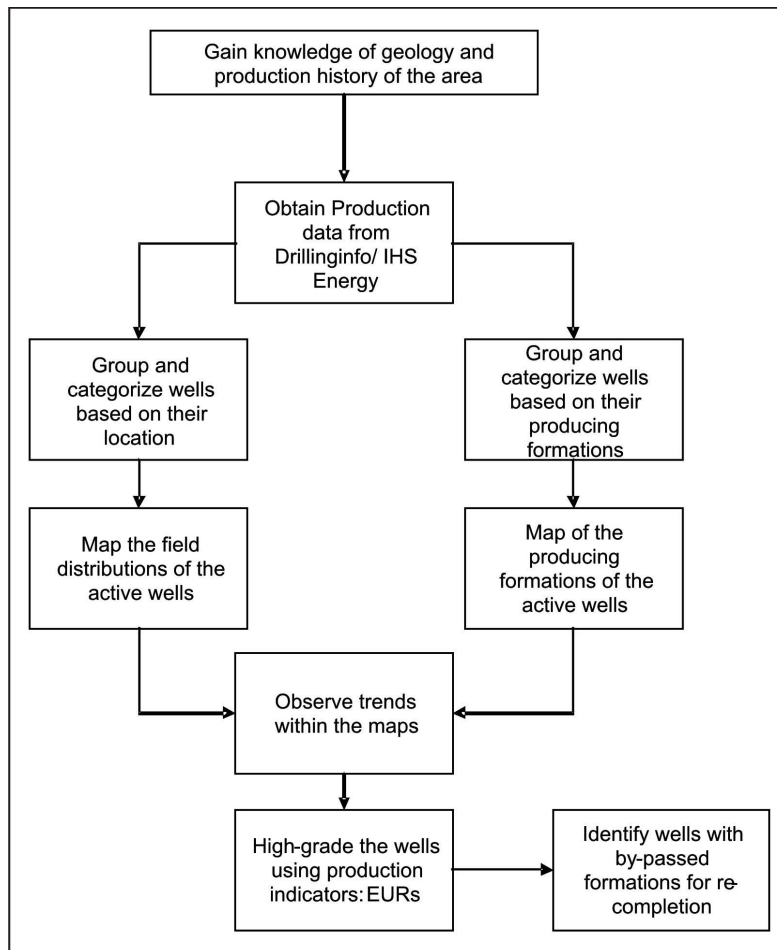


Figure 5 Workflow employed in identifying wells with bypassed formations

The database for the study area was sorted by various criteria. The older inactive wells were noted along with the current active wells which were defined to be wells that have recorded production in 2005. Maps of the wells were created based on the criteria defined in Figure 5. Figure 6 shows all wells both active and inactive that were included in the study.

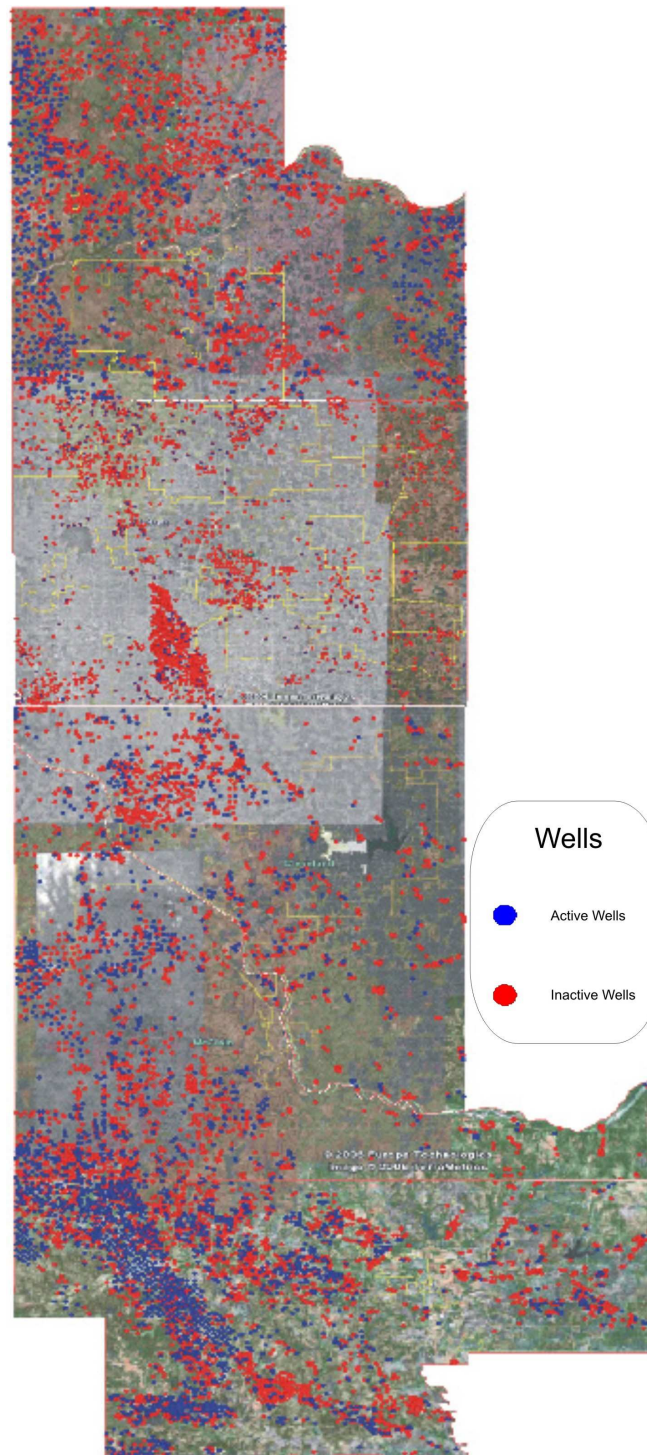


Figure 6

Wells in the study area grouped by status

The database for the five county area was sorted by the producing formation. As earlier stated, this process proved challenging due to the inconsistency of naming formations. Classifying these formations into three major groups based on the ages of the formations helped to simplify the process. The formations in each well identified as having bypassed potential will have to be investigated in greater detail in order to determine the precise formation containing the possible bypassed reserves.

We classified the formations in the following major groups:

1. Upper formation (Permian age)
 - Council Grove Formation
 - Ragan SS
 - Newberry
 - Robbserson
 - Mauldin
2. Shallow formation (Pennsylvanian and Mississippian age)
 - Cisco (Upper Pennsylvanian): Pawhaska, Oread, Tonkawa, Belle city, Endicott, Crews SS, Hoover SS, Perry Gas SS, Ada
 - Hoxbar (Missourian): Hogshooter, Checkerboard 1 and 2, Layton, Cleveland SS, Jones SS, Avant LS, Cottage Grove
 - Deese: Deese 1 and 2, Oswego, Peru, Big Lime, Gibson SS
 - Cherokee: Inola LS, Bartlesville SS, Hart, Osborne, Prue, unconformity, Verdigris, Pink LS, Red Fork SS, Cherokee, Skinner, Bevier coal
 - Atoka: Morrow
 - Mississippian: Cunningham, Britt, Boatwright, Chester, Manning, Meramec, Sycamore, Osage and Kinderhook
3. Deep formation (Siluro-Devonian, Ordovician, and Cambrian age)
 - Woodford Shale, Misener, Hunton- Frisco, Bois d'Arc, Haragan, Henryhouse, Chimneyhill
 - Viola- Fernvale, Trenton; Wilcox, Dolomite, Bromide, Simpson, Tullip Creek, McLish, Oil Creek, Arbuckle.

These groupings ensured that rocks with similar characteristics were classified together irrespective of the names they were given in their different locations.

Drilling and production trends were very distinct after mapping in the currently active wells in each formation. Any formation showing a strong trend of good production was then investigated in greater detail. The wells in each county were color-coded based on the producing formations grouped as detailed above and are shown in Figures 7 through 11.

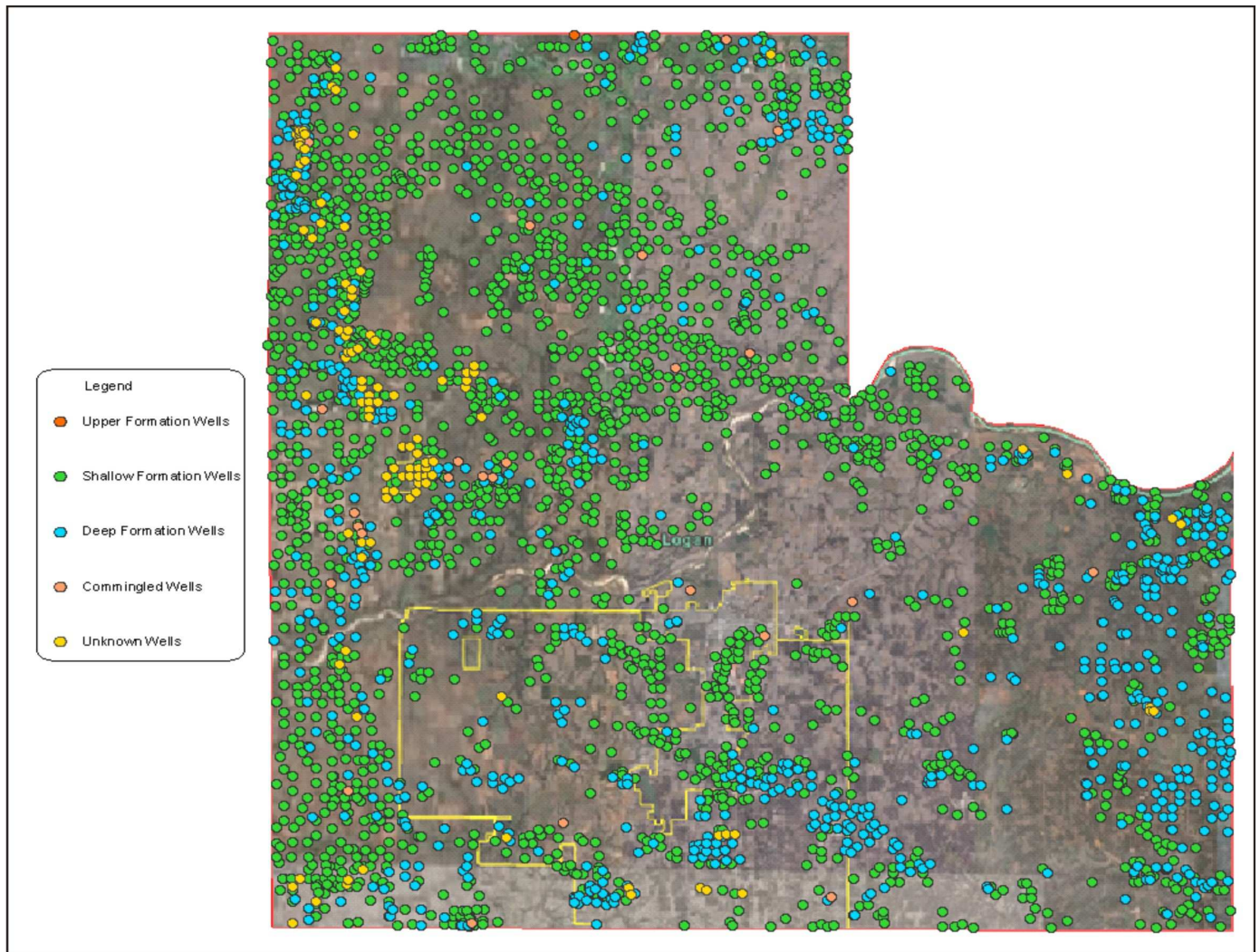


Figure 7 Logan County wells grouped by producing formations

There are 3,384 wells drilled and completed in Logan County. Of these wells, only 451 wells are currently active. This indicates that about 87% of the wells completed in Logan county are currently inactive and are either plugged and abandoned or shut-in and considered uneconomical.

Based on the classification of the formations, 2,478 completions were placed in the shallow category. This indicates that the shallow category contains the most productive intervals in Logan County. A total of 758 completions were placed in the deep category. Drilling and production trends in Logan County are shown in Figure 7.

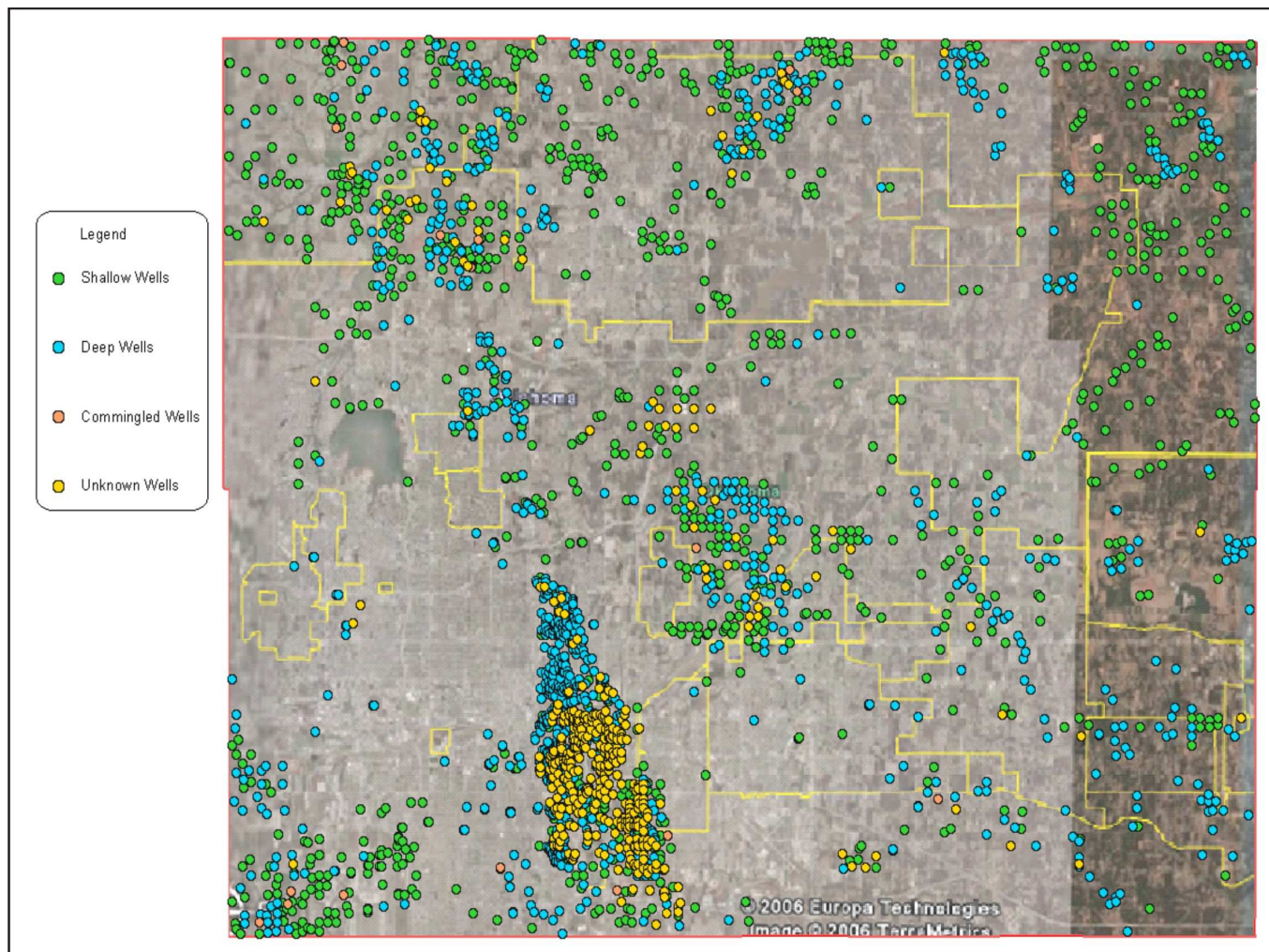


Figure 8 Oklahoma County wells grouped by producing formations

There are 3,145 wells drilled and completed in Oklahoma County. Of these wells, only 356 wells are currently active, therefore 87% of the wells once completed in Oklahoma County are currently inactive. The inactive wells are either plugged and abandoned or shut-in and uneconomic.

Based on the classification of the formations, 1,404 completions were placed in the shallow category. As in the previous case, the shallow category contains the most productive intervals in Oklahoma County. A total of 1,104 completions were placed in the deep category. Drilling and production trends in Oklahoma County are shown in Figure 8.

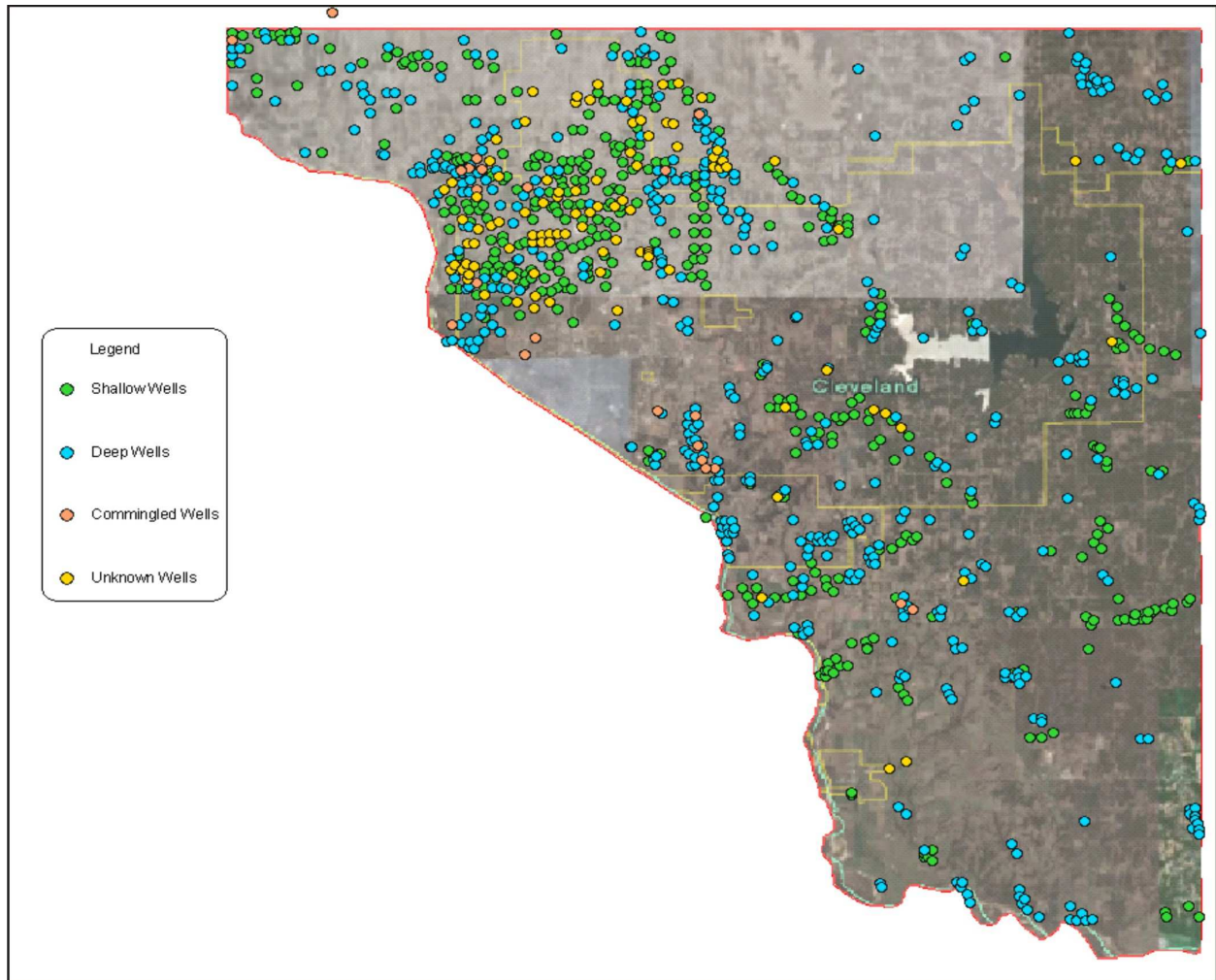


Figure 9 Cleveland County wells grouped by producing formations.

There are 1,072 wells drilled and completed in Cleveland County. Of these wells, only 254 wells are currently active, therefore 76% of the wells once completed in Cleveland County are currently inactive. The inactive wells are either plugged and abandoned or shut-in and uneconomic.

Based on the classification of the formations, 477 completions were placed in the shallow category. A total of 482 completions were placed in the deep category. Drilling and production trends in Cleveland County are shown in Figure 9.

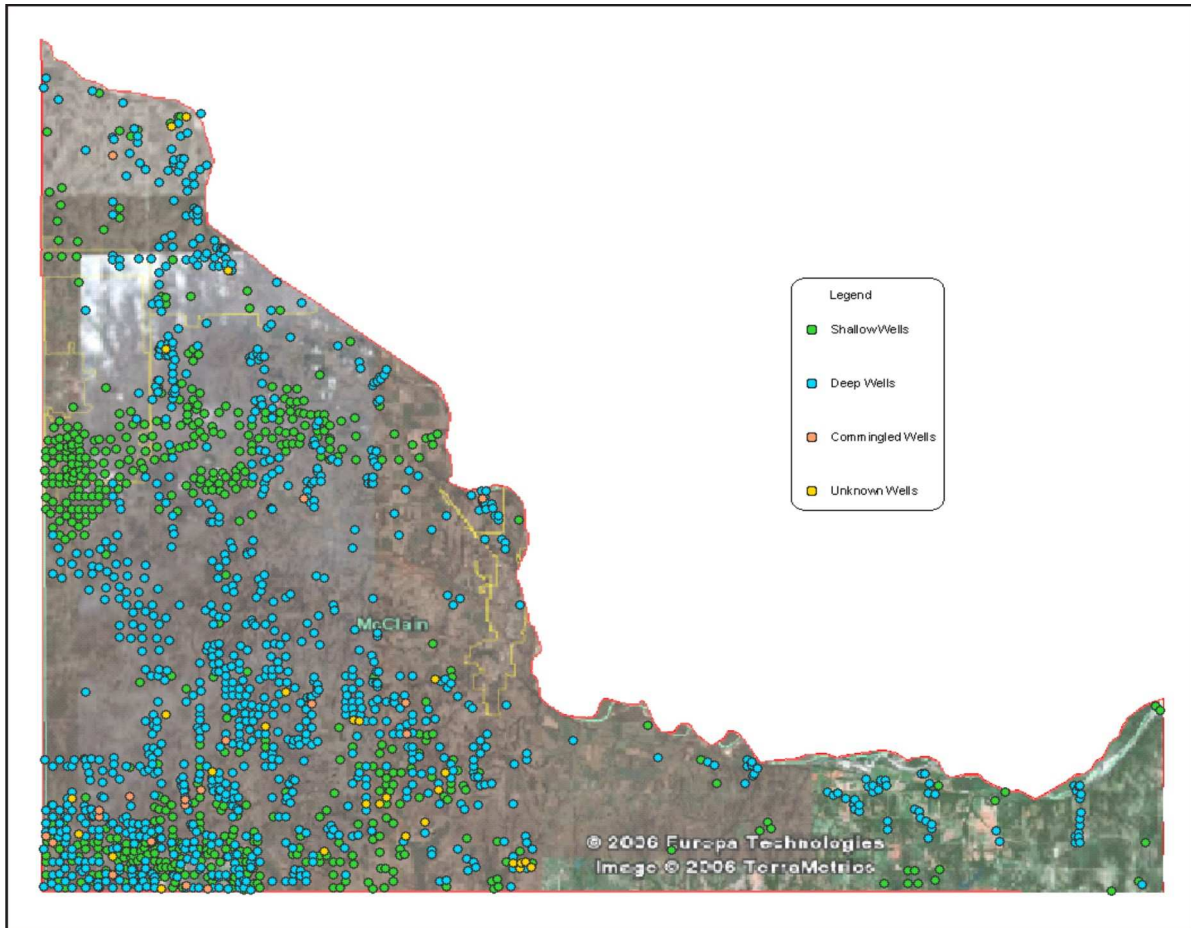


Figure 10 McClain County wells grouped by producing formations.

There are 2,036 wells drilled and completed in McClain County. Of these wells, only 565 wells are currently active, therefore 72% of the wells once completed in McClain County are currently inactive.

Based on the classification of the formations, 732 completions were placed in the shallow category. A total of 1,045 completions were placed in the deep category. Drilling and production trends in McClain County are shown in Figure 10.

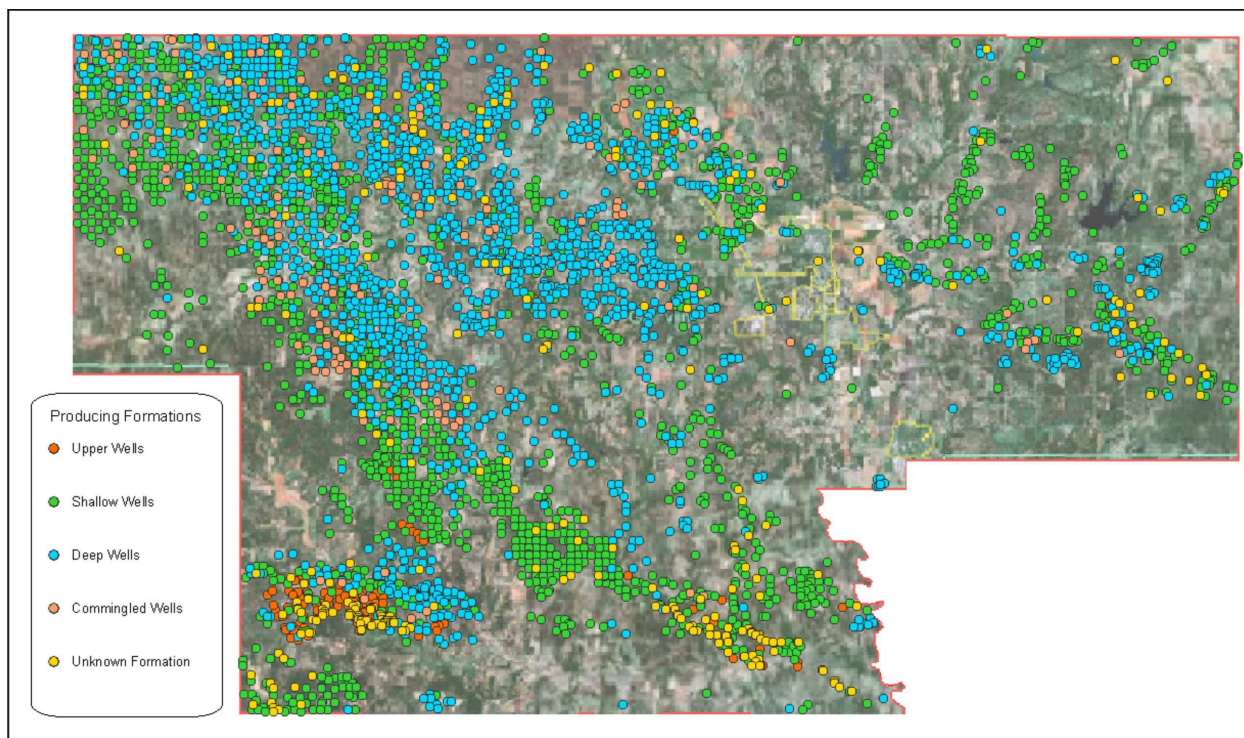


Figure 11 Garvin County wells grouped by producing formations.

There are 4,393 wells drilled and completed in Garvin County. Of these wells, only 1,005 wells are currently active, therefore 77% of the wells once completed in Garvin County are currently inactive.

Based on the classification of the formations, 2,371 completions were placed in the shallow category. A total of 1,893 completions were placed in the deep category. Drilling and production trends in Garvin County are shown in Figure 11.

After considering the producing trends within each county, statistical analyses of the formations of interest were performed using Moving Domain software. A composite production (Time Zero) profile of the formation was constructed from the measured production data based on single completions. The historical production data was taken from the last 20 years (1985 to present) to obtain a good representation of the current production trends. Decline curve parameters were calculated from the generated production profiles that allowed estimates of ultimate recoveries (EURs) for individual wells. We could then identify areas of good production (sweet spots) based on mapping the EURs for the wells given a particular group or category. Offset wells in close proximity to the better performing wells along the producing trend were then noted and cataloged. The completion intervals of the offset wells were also investigated to determine if they were completed in the formation of interest. Once it was established that they had not been opened in the formation of interest, these wells were noted as having behind-pipe potential. They were then listed as candidates for re-completion.

RESULTS AND DISCUSSION

The methodology to ascertain potential wells for re-completions was applied to the five county study. The wells with single completions after 1985 were identified and the completion interval determined (shallow or deep). The potential of re-completions within the shallow formations, particularly the Cherokee, was the major focus of this study. Composite production profiles for the Cherokee formation investigated in each county were generated and are shown in Appendix F. Decline parameters were obtained from the production profiles that were used for estimates of ultimate recoveries (EUR) for individual wells completed in the Cherokee. The EUR map for each well in the Cherokee formation in each county is shown in the following Figures 12 through 17.

Logan County

Figure 12 is a bubble map of the EURs for the wells producing from the Cherokee formation in Logan County.

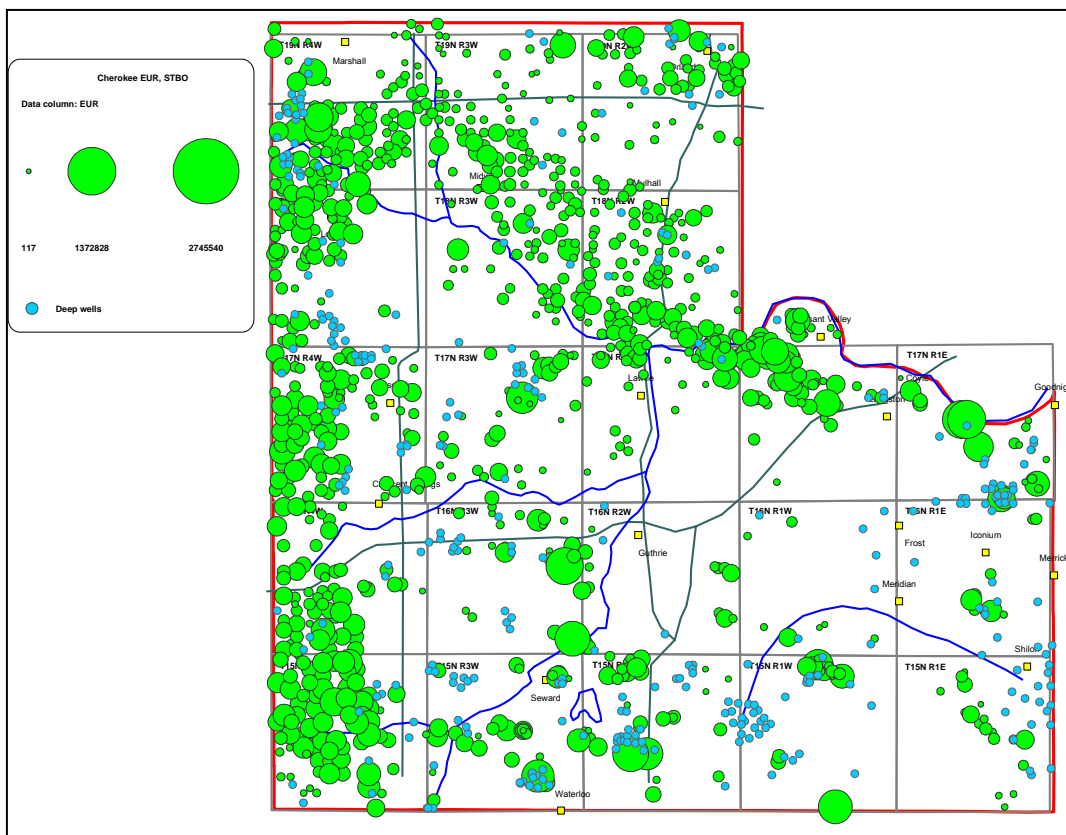


Figure 12 Cherokee Completion EUR's – Logan County

Also shown in Figure 12 are the wells that are producing from the deep formations represented by the small blue circles. The different sizes of the green circles (the Cherokee completions) correspond to the values of the EURs for these wells. Hence, the well with the lowest EUR of 117 STB, is represented by a small green circle, whereas the well with the highest EUR of 2,745,540 STB, is represented by a large green circle. This type of bubble map aids in high-grading the expected performance of the wells and visually identifying the areas with good Cherokee production (sweet spots) in the county. Wells completed in the deep formations that are in proximity to the Cherokee wells with the highest estimated ultimate recovery are then noted and cataloged. These wells lie along the productive trend of the Cherokee formation. The completion intervals of these deep wells are then investigated and, if they show no

completion in the Cherokee formation, there is a high probability that they contain behind-pipe pay in this formation. They are then cataloged for re-completion. The identified deep wells which are recommended for re-completion in the Cherokee formation in Logan County are shown by the pink circles in Figure 13.

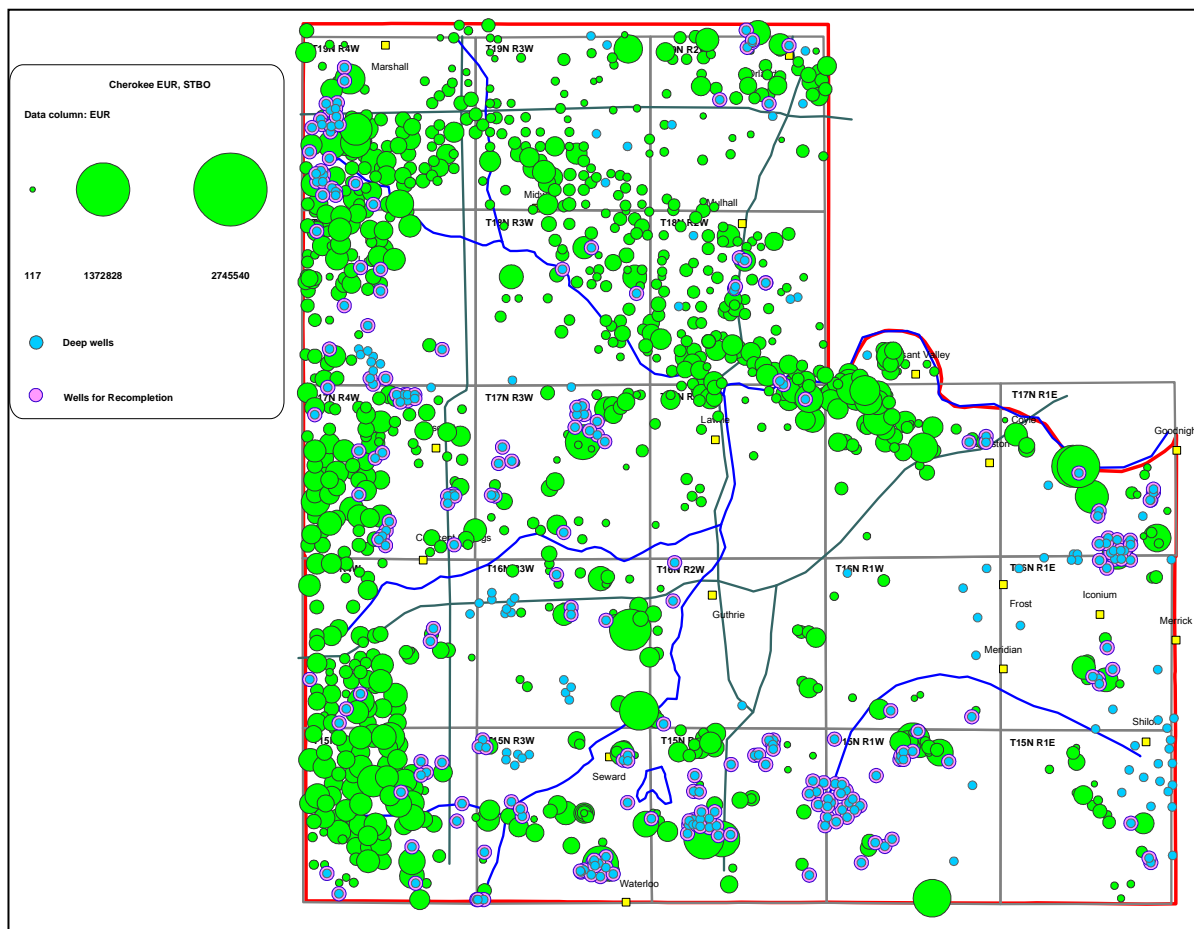


Figure 13 Recommended Cherokee Re-completions - Logan County

A total of 252 wells were identified as potentially containing bypassed pay in the Cherokee formation in Logan County. Sixty-eight (68) of these wells are currently active; that is, possess production records for 2005. A list of all the identified wells with their API numbers, lease name, field name, section, township and ranges; as well as the operators of these wells are listed in Appendix A. We have also constructed Microsoft EXCEL spread sheets with listings of all the possible re-completions, active or inactive, with additional identifying parameters the user may wish to search or order. We will make these spread sheets available along with digital copies of the maps.

Analysis of the single zone completions within the Cherokee group in Logan County from 1985 reveal that the high performing wells have expected ultimate recovery of 71,987 STB; the medium performing wells have an EUR of 18,657 STB while the worst performing wells have an EUR of 1,862 STB. This yields an indication of the production performance that might be expected from re-completions in the identified wells.

Oklahoma County

Figure 14 shows a bubble map of the EURs for the wells producing from the Cherokee formation in Oklahoma County.

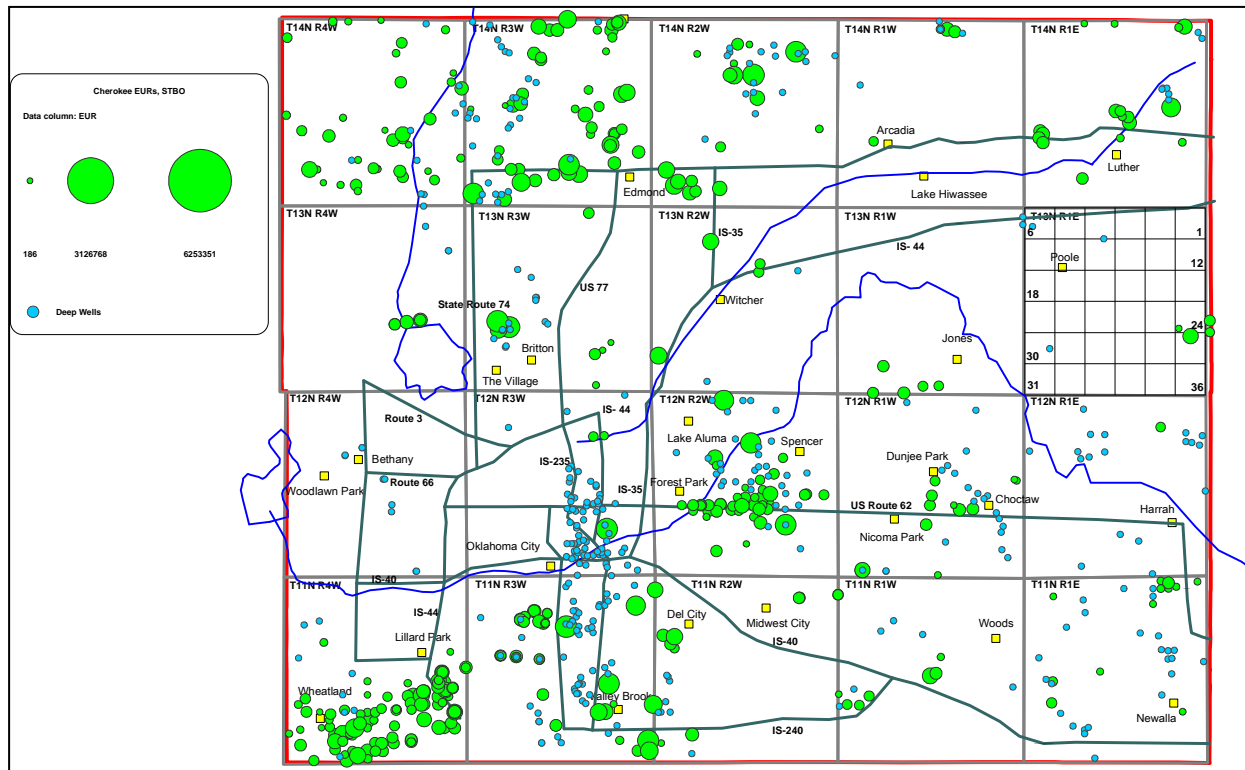


Figure 14 Cherokee Completion EUR's – Oklahoma County

Also shown in Figure 14 are the wells that are producing from the deep formations represented by the small blue circles. The different sizes of the green circles (that is the Cherokee completions) correspond to the values of the EURs for these wells. Hence, the well with the lowest EUR of 186 STB, is represented by a small green circle, while the well with highest EUR of 6,253,351 STB, and is represented by a large green circle. This type of bubble map aids in high-grading the expected performance of the wells and visually identifying the areas with good Cherokee production (sweet spots). Wells completed in the deep formations that are in proximity to the Cherokee wells with the highest estimated ultimate recovery are then noted and cataloged. These wells lie along the productive trend of the Cherokee formation. The completion intervals of these deep wells were investigated and if the well was not completed in the Cherokee formation there is a high probability that there may be behind-pipe pay at this location. They are then noted and cataloged for possible re-completion. The identified deep wells which are recommended for re-completion in the Cherokee formation in Oklahoma County are shown by the pink circles in Figure 15.

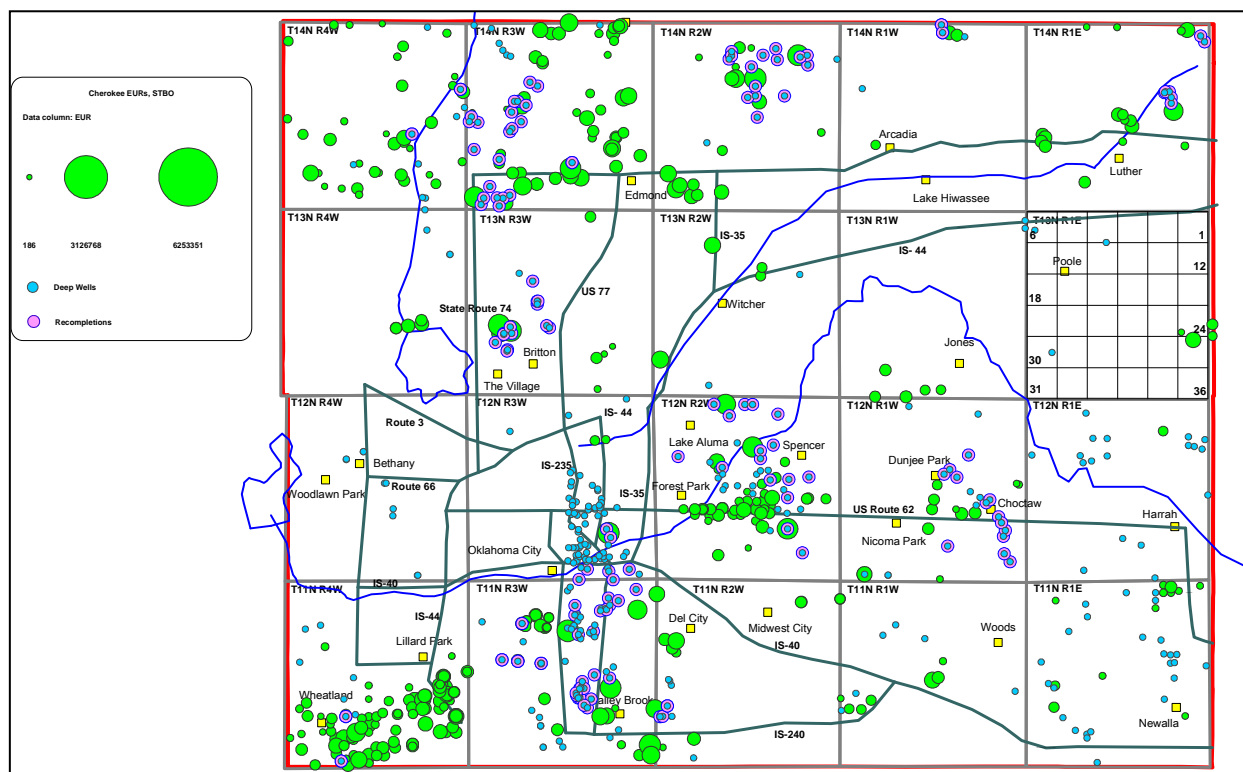


Figure 15 Recommended Cherokee Re-completions - Oklahoma County

A total of 139 wells were identified as potentially containing bypassed pay in the Cherokee formation in Oklahoma County. Fifty-one (51) of these wells are currently active; that is, possess production records within the last six months. The identified well candidates are listed in Appendix B. We have also constructed Microsoft EXCEL spread sheets with listings of all possible re-completions, active or inactive, with additional identifying parameters the user may wish to use as search or re-order criteria. We are planning to provide these spread sheets along with digital copies of the maps to the Consortium.

Analysis of the single zone completions within the Cherokee group in Oklahoma County from 1985 reveal that the high performing wells have expected ultimate recovery of 135,266 STB; the medium performing wells have an EUR of 53,333 STB while the least performing wells have an EUR of 8,692 STB. This gives an indication of the production performance that might be expected from re-completions in the identified wells.

Cleveland and McClain Counties

Map of the EURs of the Cherokee wells in Cleveland and McClain counties are shown in Figure 16.

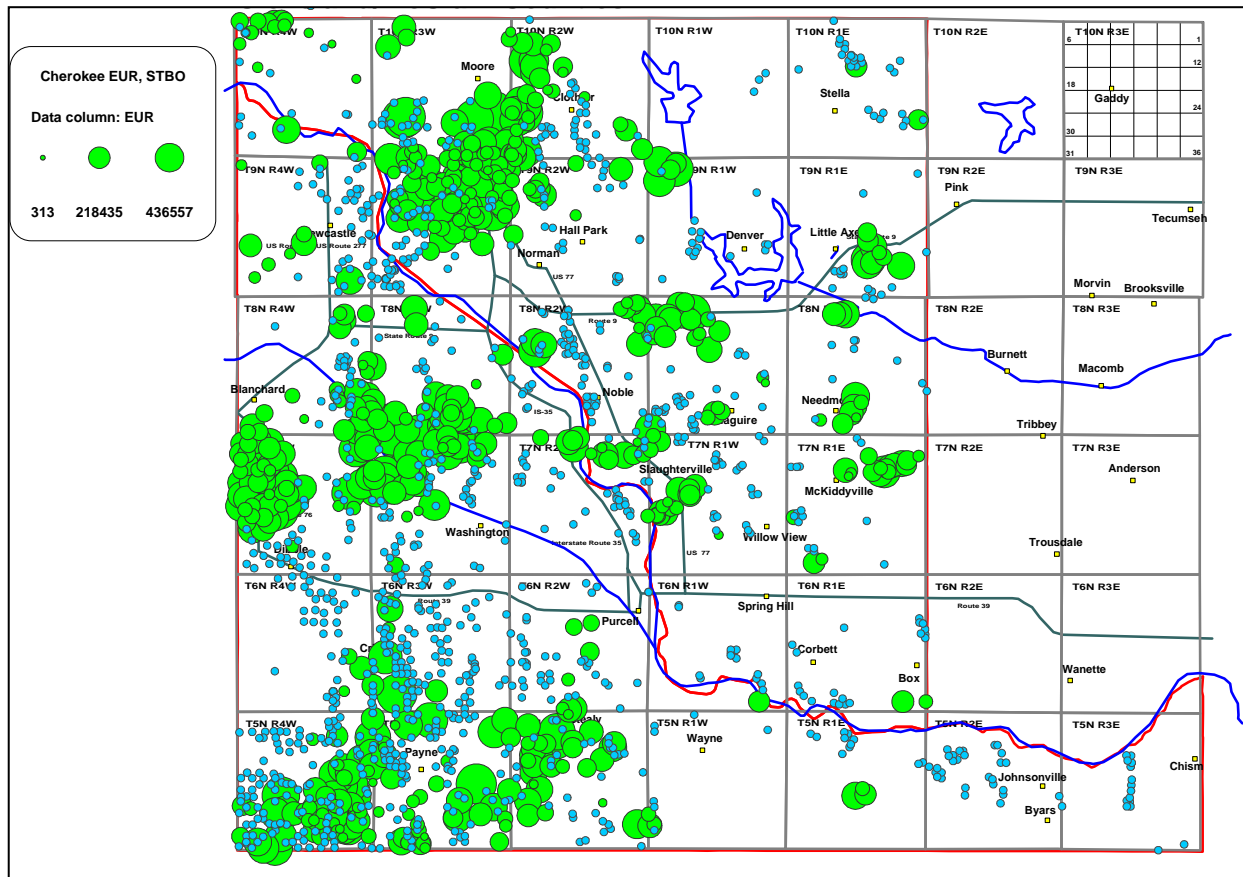


Figure 16 Cherokee Completion EUR's - Cleveland and McClain County

The wells producing from deep formations are indicated by the small blue circles corresponding to the previous maps. The different sizes of the green circles (that is the Cherokee wells) correspond to the values of the EURs for these wells. Hence, the well with the lowest EUR of 313 STB, is represented by a small green circle, whereas the well with highest EUR of 436,557 STB, is represented by a large green circle. This type of bubble map aids in high-grading the expected performance of the wells and visually identifying the areas with good Cherokee production. Wells completed in the deep formations that are in proximity to the Cherokee wells with the highest estimated ultimate recovery are then noted and cataloged. These wells lie along the productive trend of the Cherokee formation. The completion intervals of these deep wells are then investigated and if they show no completion in the Cherokee formation, there is a high probability that they contain behind-pipe pay in this formation. They are then noted for re-completion. The identified deep wells which are recommended for re-completion in the Cherokee formation in Cleveland and McClain counties are shown by the pink circles in Figure 17.

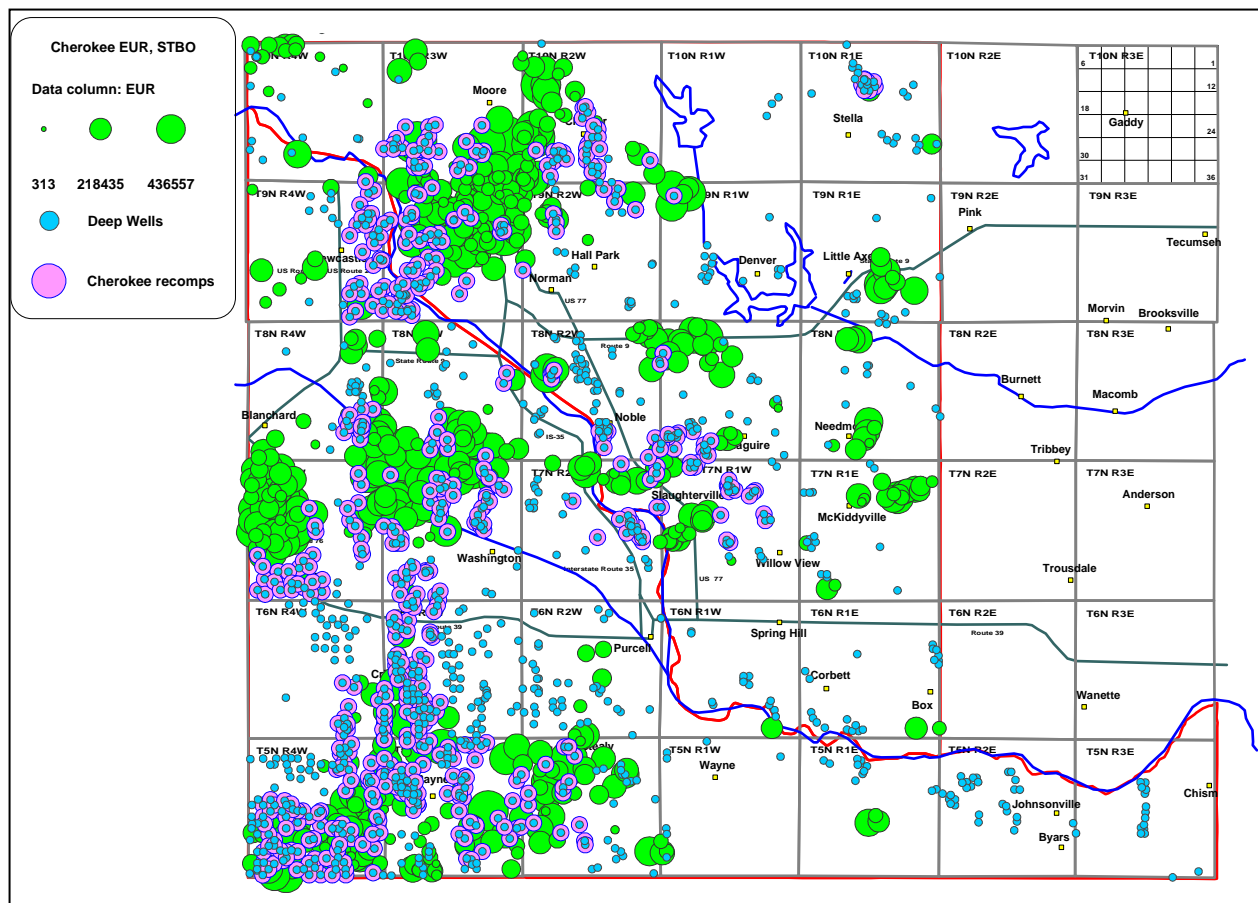


Figure 17 Recommended Cherokee Re-completions - Cleveland and McClain Counties

A total of 171 wells were identified as potentially containing bypassed pay in the Cherokee formation in Cleveland County, while a total of 465 wells were identified in McClain County. In Cleveland County, sixty-six (66) of the 171 wells are currently active; while in McClain County, two hundred and two (202) of the 465 wells are currently active. The identified wells in Cleveland County are listed in Appendix C and the active wells in McClain County are in Appendix D.

Analysis of the single zone completions within the Cherokee group in Cleveland and McClain Counties from 1985 reveals that the high performing wells have expected ultimate recovery of 121,323 STB; the medium performing wells have an EUR of 46,564 STB while the least performing wells have an EUR of 734 STB. This gives an idea of the production performance expected from Cherokee recompletions.

Garvin County

The bubble map of the EURs for the wells producing from the Cherokee formation in Garvin County is shown in Figure 18.

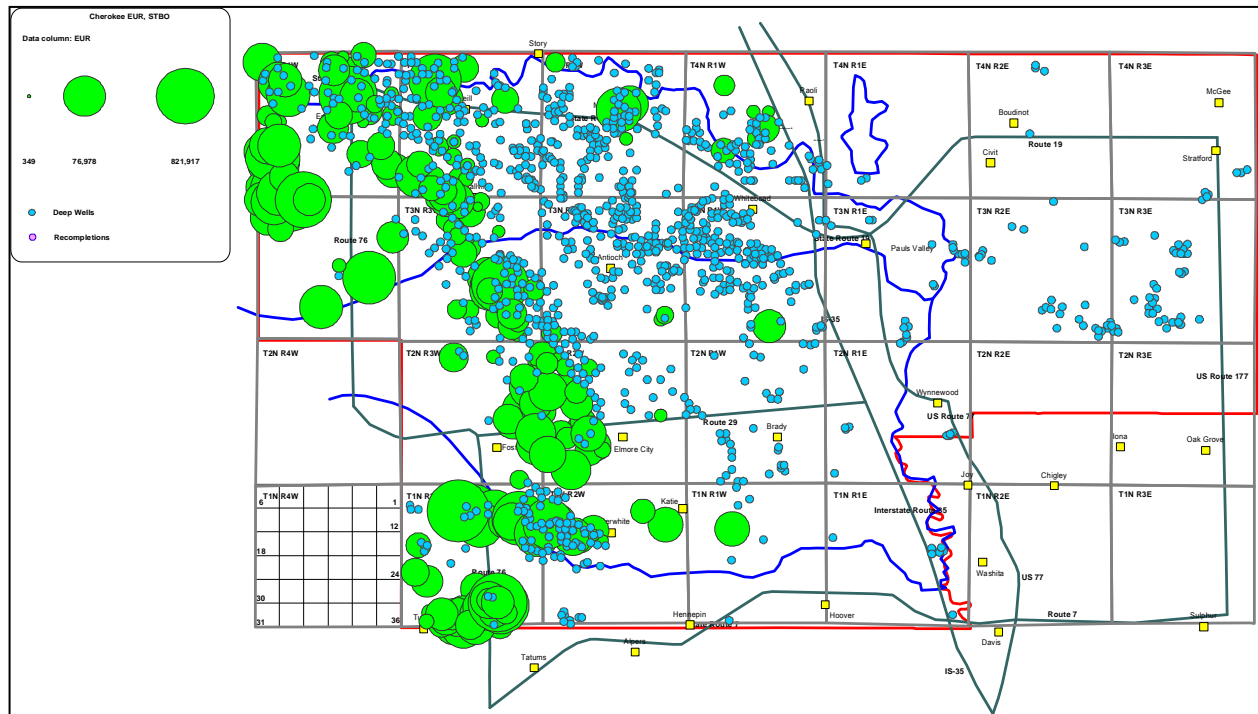


Figure 18 Cherokee Completion EUR's - Garvin County

Also shown in Figure 18 are the wells that are producing from the deep formations represented by the small blue circles. The different sizes of the green circles (that is the Cherokee wells) correspond to the values of the EURs for these wells. Hence, the well with the lowest EUR of 349 STB, is represented by a small green circle, whereas the well with highest EUR of 821,918 is represented by a large green circle. This type of bubble map aids in high-grading the expected performance of the wells and visually identifying the areas with good Cherokee production in this county. Wells completed in the deep formations that are in proximity to the Cherokee wells with the highest estimated ultimate recovery are then noted. These wells lie along the productive trend of the Cherokee formation. The completion intervals of these deep wells are then investigated and if they show no completion in the Cherokee formation, there is a high probability that they contain behind-pipe pay in this formation. They are then noted and cataloged for re-completion. The identified deep wells which are recommended for re-completion in the Cherokee formation in Garvin County are shown by the pink circles in Figure 19.

CASE STUDY: NORTHWEST NOBLE FIELD

The Northwest Noble field located in Cleveland County, Oklahoma served as a case study for the methodology for prospecting for by-passed pay. This field has sixteen marginal wells and is typical of Brownfield producing areas in Oklahoma. The Noble field is located right in the center of the five county study area. Historical oil production from this field has been predominantly from the deep formations. By observing the drilling and production trends in three counties (Oklahoma, McClain and Cleveland Counties), the shallow formations, particularly the Cherokee group, were identified to be mostly by-passed.

Shallow zones have not been opened in these wells because they were considered to be 'wet' and not commercially viable. This was due to the interpretation techniques that were being used at that time. It was later determined that these sands were comprised of shaley intervals that contain conductive minerals such as pyrite. It is now understood that the pyrite tends to yield low resistivity readings in good pay zones using the open hole logs that were in use at that time. The standard Archie's equation (1) for water saturation implies these zones were wet.

$$S_w = \left(\frac{0.81 R_w}{\phi^2 R_t} \right)^{1/2} \dots\dots\dots (1)$$

Hence, a need for a modified form of the water saturation model such as Fertl and Hammack model that accounts for the presence of shale in these channel sands.

$$S_w = \left(\frac{0.81 R_w}{\phi^2 R_t} \right)^{1/2} - \left(\frac{V_{sh} R_w}{0.4 \phi R_{sh}} \right) \dots\dots\dots (2)$$

Equation (2) uses the shale content (V_{sh}) which was estimated from SP logs by the following relationship (3).

$$V_{sh} = 1 - \frac{E_{psp}}{E_{ssp}} \dots\dots\dots (3)$$

This equation treats the shale effect as a correction term subtracted from the clean sand estimate. The correction term, ΔS_w is then expressed using the following equation (4).

$$\Delta S_w = \frac{V_{sh} R_w}{0.4 \phi R_{sh}} \dots\dots\dots (4)$$

Equation 2 has the advantage of pointing out the practical aspects of the shale effect, as treating the shaly sand as clean will underestimate the potential of a hydrocarbon formation because high water saturation values will be calculated.

Estimates of potential oil in place (OIP) for each zone of the Cherokee group in each well were calculated. A water saturation cut-off of 60% was used as cut-off saturation and the current well spacing of 40 acres was substituted for drainage area. The amount of oil estimated to be recoverable from each well in the Northwest Noble field within the Cherokee group of sands was calculated using the expression (5).

$$N_R = 7,758 \frac{AF_R}{B_o} \sum_{i=1}^n h_i \phi_i (1 - S_w) \dots \dots \dots (5)$$

An oil formation volume factor (B_o) of 1.37 RB/STB and a recovery factor of 20% were assumed in the calculations. Using the equations outlined above, it is estimated that an additional 1,810,000 STB of recoverable oil may be present in by-passed zones in the sixteen wells evaluated in the Northwest Noble field.

Wells	Oil in Place (STB)
Leon#2	152,260
Leon#1	150,100
Madole Unit #1	180,950
Madole Unit #2	156,550
Frank Tullius #2	134,330
Tullius Unit #1	76,160
Frank Tullius #3	134,510
Frank Tullius #4	119,350
Frank Tullius #1	186,310
Clarence Tullius #1	90,340
Clarence Tullius #3	106,810
Clarence Tullius #2	108,240
Linda Tullius #2	75,050
Herb Tullius #1	75,000
Long #1	57,450
Long #2	6,060
Total By-passed Pay	1,810,000

Table 1 EUR of behind-pipe pay - Northwest Noble field

The petrophysical parameters and water saturation model used to estimate the recoverable reserves in the Northwest Noble field was validated by using the new parameters to estimate the reserves in adjacent wells that have produced from these zones. A good match between the cumulative production of these wells and the reserves estimated for these wells were obtained as reported by Olukoga, 2006.

The petrophysical parameters and the formation evaluation employed can be utilized for evaluating the wells identified as having by-passed pay zones in the five county study area. This is contained in the spreadsheet accompanying this report.

Initial Results of New Behind-pipe Recompletions

Sand Resources the operator of the Northwest Noble field developed a recompletion program and also implemented an acquisition program based on our earlier research. The study indicated additional reserves in the deeper zones and potential for significant new reserves in several shallow zones. The recompletion program currently being implemented by Sand Resources is focused on obtaining additional production from the deeper zones prior to moving up hole to the shallower zones. The first phase of the initial recompletion program has been attempted on the following wells:

1. Frank Tullius #1
2. Frank Tullius #2
3. Frank Tullius #3
4. Frank Tullius #4

Frank Tullius #1: Prior to this study, this well was cleaned out to the original total depth(TD) in an attempt to recomplete the Arbuckle formation at an cost of over \$250,000 due to trash in the wellbore only to find the cement across this zone was very poor. Poor primary cement jobs are the most important aspect and potential problem with recompletions of old wellbores. A bridge plug was placed just below the Tulip Creek formation at 8,300 feet. In January of 2005, the Bromide interval was perforated at a depth of 7,953 feet to 8,157 feet. There was no stimulation treatment. The well was put on production with a standard 1-1/4-inch rod pump and produced at a rate of approximately 120 barrels of total fluid per day, 6 barrels of oil per day and 8.0 MCFD of associated gas. In August of 2006, the pump size was increased to 2.0-inchs and production was increased to approximately 600 BFPD of total fluid with 20 BOPD of oil and 8.0 MCFD gas. The operator plans to install a Schlumberger electric submersible pump (ESP) on the well in the first quarter of 2007 which will increase the total fluid rate to over 2,500 BFPD and anticipates oil production of around 70 to 80 BOPD.

Frank Tullius #2: This well was recompleted in the Viola formation in January of 2005 by re-perforating several sections of this very thick interval. A high volume Weatherford Unidraulics Unit was placed in service in July of 2005. Initial results were significant and oil production increased from less than 5 BOPD to approximately 35 BOPD and a modest amount of associated gas. Total fluid increased from slightly over 100 BPD to approximately 1,800 BPD. It should be noted that all four Frank Tullius wells are produced into a common separation and tank battery system so exact numbers by well are not easily obtained. The operator encountered significant difficulty in keeping this system in operation and in October of 2006 changed to a Schlumberger ESP with variable frequency control and downhole pressure and temperature recording systems so that the well performance could be analyzed in more detail. An additional section of the Viola was also perforated using the Schlumberger P4 Propellant system to treat the new perforations. The operator reported that a hole developed in the casing shortly after this system was installed, and the downhole pump failed due to debris produced to the wellbore. The operator later squeeze cemented the hole in the casing and returned the well to production with significant initial results of 2,000 BFPD total fluid and 40 plus barrels of oil per day. Once again the pump picked up debris and failed. A filter system has been installed to hopefully prevent this problem from re-occurring. After returning the well to production for a week, one of the salt water disposal tanks developed a leak and had to be shut down for repairs. Also, a hole was discovered in the new string of tubing in the disposal well and is being repaired. This has prevented the operator from obtaining stabilized production data. The operator plans to increase the total fluid rate to around 3,000 barrels per day with an anticipated oil production of around 50 to 60 BOPD after the repairs.

Frank Tullius #3: The operator reported that in late July of 2006 this well was recompleted by drilling out the bridge plug over the Oil Creek formation, squeeze cementing the old perforations, perforating the upper section and stimulating with a Gas Propellant system. A production packer was set over the Oil Creek to isolate upper intervals. The results have been disappointing with a total production rate of 120 BFPD total fluid and 1 to 2 BOPD with 2.0 MCFD gas. The performance of the well is still being analyzed to determine future work.

Frank Tullius #4: In early August of 2006 the bridge plug between the two Viola sections was removed and the well returned to production with a packer set below the Viola to block the high water flow from the McLish zone. The well produced water for 3 weeks before oil shows. It produced 15 barrels of oil for about 3 days and then tapered off to zero and quit pumping. The pump and tubing were stuck. The rods and tubing were finally pulled with the exception of the tail pipe. The well is being pumped from a shallower depth and making approximately 90 BFPD total fluid with 1 to 2 barrels of oil per day. The well performance is still being analyzed to determine if the packer should be retrieved or recompleted in a shallow zone.

The operator reports that the oil cut remained fairly constant even when large volumes of fluid were pumped. At current oil prices this approach is feasible and economic. The recompletion efforts to increase total fluid rate and total oil and gas production have been generally successful. According to the operator early indications are that recompletions will be more successful as the numerous mechanical problems are solved.

The field report by the operator confirms the existence of significant additional reserves in these marginal wells that might otherwise be deemed uneconomical. The results obtained for the recompletions in this field are typical for other wells located within the five county area of study that this research focuses upon. It is however noteworthy that these wells are likely to have mechanical problems such as tubing and casing leaks. However, current oil prices make these additional reserves attractive to any operator who wishes to redevelop their marginal field.

ABC - Analysis Behind Casing

The entire premise of this study was to determine the un-tapped behind pipe potential of existing wellbores in a five county area. It would seem logical that we should discuss modern techniques and logging tools that could aid operators in analyzing un-tapped reserves prior to re-completions which can become quite costly depending on the remedial work that may be required. While perforating new zones is generally a low cost item additional remedial work to isolate intervals using squeeze cementing techniques can become prohibitively expensive depending on the results of the work.

Today the same high-quality formation evaluation measurements can be made in cased holes. ABC* Analysis Behind Casing services satisfy three primary requirements for operators:

1. Obtaining essential well log data under any conditions. Operators may prefer to case the well as soon as it is drilled if the well is having hole stability problems. Formation evaluation can now be performed in cased hole with recent innovations.
2. Finding and evaluating bypassed pay. Large amounts of bypassed hydrocarbons exist in old wells. It is considerably more cost effective to explore for those hidden hydrocarbons in old wells rather than to drill new wells.
3. Optimizing reservoir management. Formation evaluation measurements made in representative wells using a time-lapse series can assist in the efficient management of the reservoir.

ABC evaluation of formation petrophysical properties such as formation density, porosity, and acoustic properties in cased wells is even more significant in wells for which primary evaluation data were lost, of poor quality, or never acquired in the first place. In old wells, an operator may want to reevaluate the formation with measurements that were unavailable at the time the well was drilled. ABC services enable applying the latest formation evaluation technology in wells that were drilled decades ago. It is no longer necessary to drill new wells in existing fields solely for the purpose of data gathering.

The data is processed and interpreted to provide a total solution for efficient operations, enhanced production, and extension of the economic life of an asset. ABC services can provide comprehensive formation evaluation under most conditions. Because they are a suite of services rather than a single platform, measurements can be chosen on the basis of objectives, type of formation, type of completion, borehole environment, lithology, reservoir dynamics, and the availability of primary evaluation data. ABC components include:

1. **CHFR-Plus*** Cased Hole Formation Resistivity tool makes direct, deep-reading formation resistivity measurements through casing and cement. The concept of measuring resistivity through casing is not new, but recent breakthroughs in downhole electronics and electrode design have made these challenging measurements possible. Now the same basic measurements can be compared for open and cased holes, eliminating the errors caused by comparing different types of measurements.
2. **RSTPro*** Reservoir Saturation Tool makes both formation sigma and carbon/oxygen (C/O) ratio measurements. In formations with high salinity formation water, the sigma measurement has been used for several decades to determine the saturations. Now the C/O ratio measurement can accurately evaluate formation water saturation in moderate to high porosity formations. Time lapse measurements of formation water saturation can be used to monitor the performance of a well or reservoir over time.
3. **CHFP*** Cased Hole Formation Porosity service makes accurate formation porosity and sigma measurements in cased wells. The CHFP measurement, based on an electronic neutron source instead of a chemical source, uses borehole shielding and focusing to obtain porosity measurements that are affected only minimally by borehole environment, casing standoff, and formation characteristics such as lithology and salinity.

4. **CNL*** Compensated Neutron Log has traditionally been run as a porosity indicator in cased wells. Although it provides a good estimation of formation porosity in most conditions, the unfocused nature of the CNL log does not allow correction for environmental effects, such as thickness of casing and cement, or effects resulting from the position of the tool and casing in the borehole. For the highest possible accuracy, CHFP service is the measurement of choice.
5. **CHFD*** Cased Hole Formation Density service makes accurate formation density measurements in cased wells. A chemical gamma ray source and three-detector measurement system are used to make measurements in a wide range of casing and borehole sizes. The density measurement made by the three-detector system is corrected for casing and cement thickness.
6. **DSI*** Dipole Shear Sonic Imager, now coupled with the **BestDT*** automated sonic waveform processing for best slowness, provides accurate formation compressional and shear slowness measurements in cased wells. BestDT processing is based on optimally designed frequency filters and advanced signal processing. This method significantly attenuates casing arrivals to facilitate the clean extraction of formation slowness.
7. **CHDT*** Cased Hole Dynamics Tester is used to determine formation pressure in old or new cased wells. It also provides efficient and cost-effective fluid sampling without the inherent risks of standard sampling techniques. The innovative CHDT tool seals against the casing and uses a flexible drill shaft to penetrate through the casing and cement into the formation. The use of explosives is eliminated. Downhole sensors measure formation pressure, pressure transients, and formation fluid resistivity. Combining the CHDT tool with various modules of the **MDT*** Modular Formation Dynamics Tester enables enhanced fluid identification, contamination monitoring, and high-quality sampling. After all measurements and samples have been taken, the tool inserts a corrosion-resistant metal plug into the hole drilled in the casing, thereby preserving casing integrity and eliminating the need for costly repair procedures. Oil and gas companies can use this technology to identify zones with bypassed hydrocarbons and to monitor the depletion of reservoirs, effectiveness of water or gas injection, and changes in fluid contacts.

Applications include:

- Evaluation of bypassed pay
- Evaluation of old wells with new measurements
- Reevaluation of existing fields
- Primary formation evaluation in cased wells
- Complement to logging-while-drilling (LWD) data
- Alternative to openhole data acquisition under difficult well conditions
- Evaluation of wells drilled with casing
- Reservoir monitoring
- Fluid contact movement, saturation and pressure changes, and depletion and injection profiles

* Mark of Schlumberger

Table 2

ABC Tool Specifications

Measurement Specifications						
	CHFR-Plus Tool	RSTPro Tool	CHFP Service	CHFD Service	DSI Tool	CHDT Tool
Output	Formation resistivity	Inelastic and capture yields of various elements, C/O ratio, formation capture cross section (sigma), neutron porosity	Neutron porosity, formation sigma	Bulk density	Compressional and shear Δt , waveforms, Variable Density* waveforms	Formation pressure, fluid mobility, formation fluid samples
Logging speed	Stationary: ~1 min/station Effective logging speed†: 240 ft/hr [73 m/h]	Inelastic mode: 100 ft/hr [30.5 m/h] (formation dependent) Capture mode: 600 ft/hr [183 m/h] Sigma mode: 1,800 ft/hr [549 m/h]	900 ft/hr [274 m/h]	900 ft/hr [274 m/h]	1,800 ft/hr [549 m/h]	Stationary
Range of measurement	1 to 100 ohm-m‡	Porosity: 0 to 60 p.u.	Porosity: 0 to 60 p.u.	2 to 3 g/cm³	Standard shear slowness: 700 μ s/ft [2,296 μ s/m] Max. slowness (S-DSI): 1,200 μ s/ft 3,937 μ s/m]	0 to 20,000 psi [0 to 138 MPa]
Vertical resolution	4 ft [1.22 m]	15 in. [38.10 cm]	14 in. [35.56 cm]	18 in. [45.72 cm]	3.5-ft [1.1-m] processing resolution for 6-in. [15-cm] sampling rate	Point measurement
Accuracy	±10%	Based on hydrogen index of formation	Porosity: <7 p.u. = ±1 p.u. 7 to 30 p.u. = ±10% 30 to 60 p.u. = ±15% Sigma: ±1 cu [±0.1/m]	±0.05 g/cm	Δt : ±2 μ s/ft [±6.6 μ s/m]	CQG* gauge: ±2 psi [13,789 Pa] + 0.01 % of reading) (accuracy), 0.1 psi [689 Pa] (resolution)
Depth of investigation	Similar to deep laterolog, up to 32 ft [9.75 m], depending on environment	10 in. [20.54 cm]	7 in. [17.78 cm]	5 in. [12.70 cm]	9 in. [22.86 cm]	Drilled depth: 6 in. [15.24 cm]
Mud type or weight limitations	None	None	None	Cement thickness < 1.75 in. [4.44 cm]	None	None
Combinability	Gamma ray, casing collar locator	Combinable with tools using the PS Platform* telemetry system, CPLT* tool, Combinable Gamma Ray Sonde (CGRS)	Combinable with most toolstrings	Combinable with most toolstrings	Combinable with most tools	Combinable with most toolstrings, another CHDT tool, MDT modules
Special applications	H:S service					H:S service
Mechanical Specifications						
	CHFR-Plus Tool	RSTPro Tool	CHFP Service	CHFD Service	DSI Tool	CHDT Tool
Temperature rating	302°F [150°C]	302°F [150°C] With flask: 400°F [204°C]	350°F [177°C]	257°F [125°C]	350°F [177°C]	350°F [177°C]
Pressure rating	15,000 psi [103 MPa]	15,000 psi [103 MPa] With flask: 20,000 psi [138 MPa]	20,000 psi [138 MPa]	15,000 psi [103 MPa]	20,000 psi [138 MPa]	20,000 psi [138 MPa]
Casing size—min.	4 $\frac{1}{8}$ in. [11.43 cm]	2 $\frac{1}{8}$ in. [6.03 cm]	5 in. [12.70 cm]	6 $\frac{1}{8}$ in. [16.83 cm]	5 in. [12.70 cm]	5 $\frac{1}{8}$ in. [13.97 cm]
Casing size—max.	9 $\frac{1}{8}$ in. [24.45 cm]	9 $\frac{1}{8}$ in. [24.45 cm]	13 $\frac{1}{8}$ in. [33.97 cm]	13 $\frac{1}{8}$ in. [33.97 cm]	13 $\frac{1}{8}$ in. [33.97 cm]	9 $\frac{1}{8}$ in. [24.45 cm]
Outer diameter	3.375 in. [8.57 cm]	RST-C: 1.71 in. [4.34 cm] RST-D: 2.51 in. [6.37 cm]	3.625 in. [9.21 cm]	4.77 in. [12.11 cm]	3.625 in. [9.21 cm]	4.25 in. [10.80 cm]

†Stations are recorded every 4 ft [1.22 m]. Two resistivity measurements, 2 ft [0.61 m] apart, are made simultaneously at each station. ‡Measurements above 100 ohm-m may be possible based on environment.

CONCLUSIONS AND RECOMMENDATIONS

A total of 1,470 wells were identified as possible re-completions with un-tapped behind-pipe pay zones in the shallow formations. The Cherokee group comprising the Bartlesville, Hart, Osborne, Prue, Red Fork, and Skinner sandstone formations are especially promising.

In Logan County, 258 wells are identified for recompletion with 68 of these wells being currently active. The mean estimated ultimate recovery for the wells producing from the Cherokee group in Logan County is 18,657 STB.

In Oklahoma County, 139 wells are identified for recompletion. With 51 of these wells are currently active. The mean estimated ultimate recovery for the wells producing from the Cherokee group in Oklahoma County is 53,333 STB.

For Cleveland County, 171 wells are identified for recompletion. Of this number, 66 wells are currently active; while for McClain County, of the 465 wells identified for recompletion with 202 wells presently active. The mean estimated ultimate recovery for the Cherokee formation in both Cleveland and McClain counties is 46,564 STB.

In Garvin County, 438 wells have been identified for recompletion with 290 wells being currently active. The mean estimated ultimate recovery for the Cherokee formation in Garvin County is 55,175 STB.

Considering only the active wells in each county, a total of 32 million barrels of oil is expected to be recoverable in these counties. At current oil prices of about \$60 per barrel, this will result in additional gross revenue of \$2.0 billion to the operators.

It must be noted that this study is statistical in nature. It has screened a large number of wells for behind-pipe pay in the shallow zones. It is recommended that additional reservoir and petrophysical analysis should be performed on each well to further evaluate the feasibility of re-completing the wells. Analysis behind casing (ABC) tools are available to carry out this evaluation in some cases. The integrity of each wellbore also needs to be evaluated, particularly for the wells that are not currently active.

NOMENCLATURE

V_{sh} = shale content

E_{PSP} = shale response in the shaly zone of interest

E_{SSP} = shale response in an adjacent clean, thick zone that contains the same water salinity as the zone of interest.

B_o = oil formation volume factor

h_i = thickness in feet of an individual zone capable of flowing oil at rates of economic interest within the formation of interest

ϕ_i = fractional porosity

S_w = water saturation

7758 = number of barrels per acre-foot.

N = Oil-in-place per unit area, STB/ft²

R_t = resistivity of formation partially saturated with hydrocarbons, ohm-meter

R_w = formation water resistivity, ohm-meter

R_{sh} = resistivity of adjacent shale bed

N_R = recoverable oil volume in STB

A = drainage area in acres

F_R = recovery factor

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Appendices

Appendix A - Logan County Proposed Re-completions – Active Wells

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
1	3508300320	SCHAEFER GERRY	CRESCENT-LOVELL	WILCOX	POLK B R INCORPORATED	19N	4W	30
2	3508320065	ADKINS	SOONER TREND	HUNTON	PAYNE EXPLORATION COMPANY	16N	4W	29
3	3508320093	ANDREWS	SOONER TREND	HUNTON	PAYNE EXPLORATION COMPANY	17N	4W	20
4	3508320111	AR&JM	MULHALL WEST	CARMICHAEL	FARRAR JOHN W	18N	3W	10
5	3508320251	MCCULLY	CRESCENT-LOVELL	MCLISH / BROMIDE	POLK B R INCORPORATED	19N	4W	30
6	3508321088	KOLB	ORLANDO	VIOLA	BLACKCAT OIL COMPANY JOINT VENTURE	19N	2W	2
7	3508321317	GAINS	COYLE SOUTH	MISENER	ALTEX RESOURCES INCORPORATED	17N	1E	34
8	3508321381	MIKE	CRESCENT-LOVELL	WILCOX 1	E & S RESOURCES LIMITED LIABILITY CO	17N	4W	23
9	3508321479	SCHAEFER ROXANA	CRESCENT-LOVELL	WILCOX 1	POLK B R INCORPORATED	19N	4W	19
10	3508321480	CUTTER	SOONER TREND	HUNTON	M & V RESOURCES INCORPORATED	17N	4W	6
11	3508321510	STARKS	MERIDIAN EAST	HUNTON	SPECIAL ENERGY CORPORATION	16N	1E	27
12	3508321637	MAXINE	CRESCENT-LOVELL	DOLOMITE / SIMPSON	LOBAR OIL COMPANY INCORPORATED	18N	4W	16
13	3508321675	WILCOX	SOONER TREND	HUNTON	HERITAGE PETROLEUM INCORPORATED	17N	4W	7
14	3508321803	DEAN	CRESCENT-LOVELL	SIMPSON	POLK B R INCORPORATED	19N	4W	17
15	3508321888	ROY 27	MERIDIAN EAST	HUNTON	SPECIAL ENERGY CORPORATION	16N	1E	27
16	3508322351	DAPHNE	COON CREEK NORTH	WILCOX 1	C & M OIL COMPANY INCORPORATED	15N	1W	21
17	3508322363	GRAFF	CRESCENT-LOVELL	HUNTON / WILCOX / ARBUCKLE	WHITE OPER COMPANY	17N	4W	33
18	3508322567	MILLICAN	CRESCENT-LOVELL	SIMPSON	EARLSBORO ENERGIES CORPORATION	18N	4W	33
19	3508322577	LEGRANDE	PLEASANT VALLEY SOUTHWEST	VIOLA	CHAPARRAL ENERGY LIMITED LIABILITY C	15N	2W	21
20	3508322722	PHILLIPS	CRESCENT-LOVELL	WILCOX 1	HUNTON OIL & GAS CORPORATION	17N	4W	3
21	3508322834	EDWARD	CRESCENT-LOVELL	WILCOX	POLK B R INCORPORATED	19N	4W	18
22	3508322841	HOPKINS	CRESCENT-LOVELL	WILCOX	SOUTHWESTERN EXPLORATION CONSULTANTS	17N	4W	3
23	3508322903	ROUSE SCOTT	CRESCENT-LOVELL	WILCOX	POLK B R INCORPORATED	19N	4W	19
24	3508323002	ERGENBRIGHT	CRESCENT-LOVELL	SIMPSON DOLO	POLK B R INCORPORATED	18N	4W	29
25	3508323077	SHIRLEY	CRESCENT-LOVELL	SIMPSON	POLK B R INCORPORATED	18N	4W	32
26	3508323179	WASWO JANE	EDMOND WEST	HUNTON	MOTT PETROLEUM CORPORATION	15N	4W	11
27	3508323190	ROSALIE	EDMOND WEST	HUNTON	MOTT PETROLEUM CORPORATION	15N	4W	10
28	3508323215	GOOCH	LAWRIE WEST	VIOLA	DIA & ASSOCIATES INCORPORATED	17N	3W	10
29	3508323263	CORNFORTH C	NAVINA	VIOLA	MAYABB OIL COMPANY	15N	3W	17
30	3508323293	WALTER	WATERLOO NORTH	OIL CREEK	CHESAPEAKE OPERATING INCORPORATED	15N	3W	34

Appendix A - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
31	3508323303	BRENTLINGER	WATERLOO NORTH	ARBUCKLE	COVINGTON OIL COMPANY INCORPORATED	15N	3W	27
32	3508323389	YORK	NAVINA EAST	WOODFORD	HOLLRAH EXPLORATION COMPANY	15N	3W	6
33	3508323404	WILLIAMS	CRESCENT-LOVELL	MCLISH	POLK B R INCORPORATED	19N	4W	31
34	3508323409	LUCY C	GUTHRIE NORTHWEST	SIMPSON	LONDON WILLIAM W	17N	3W	19
35	3508323427	HOLLY E	CRESCENT EAST	VIOLA	MARJO OPERATING COMPANY INCORPORATED	17N	3W	33
36	3508323435	KATHLEEN	GUTHRIE NORTHWEST	SIMPSON	LONDON WILLIAM W	17N	3W	19
37	3508323441	VAN ZANT	EDMOND WEST	OIL CREEK	BLAIK R E INCORPORATED	15N	4W	34
38	3508323457	EMILY #1	LOVELL SOUTHEAST	WILCOX	LONDON WILLIAM W	18N	3W	32
39	3508323464	STEARMAN #1	ICONIUM	MISENER	SPECIAL ENERGY CORPORATION	16N	1E	22
40	3508323472	MCCONNEL TRUST 1-16	SOONER TREND	VIOLA	FHA INVESTMENTS LIMITED LIABILITY CO	17N	4W	16
41	3508323477	SUE #1	COYLE SOUTH	HUNTON	ALTEX RESOURCES INCORPORATED	16N	1E	3
42	3508323493	KIENHOLZ	LUCIEN	WHITNEY	STILL A B	19N	2W	3
43	3508323540	OBEX-BRIDAL	EDMOND WEST	VIOLA	DEKA EXPLORATION INCORPORATED	15N	4W	13
44	3508323560	ROY	MERIDIAN EAST	HUNTON	SPECIAL ENERGY CORPORATION	16N	1E	27
45	3508323606	HUGHES #5	COYLE SOUTH	HUNTON	NEW DOMINION LIMITED LIABILITY CORP	17N	1E	24
46	3508323645	CORAL	LAWRIE WEST	ARBUCKLE	FIRST LIBERTY ENERGY INCORPORATED	17N	3W	11
47	3508323728	SCHAUL	PRAIRIE BELL NORTHWEST	HUNTON	GLB EXPLORATION INCORPORATED	15N	3W	30
48	3508330061	POPE	EDMOND WEST	HUNTON	WARWICK ASSOCIATES L C	15N	4W	27
49	3508330246	RIGDON	CRESCENT-LOVELL	DOLOMITE / SIMPSON	RAMSEY PROPERTY MANAGEMENT LLC	18N	4W	28
50	3508336155	WILLIAMS E B B	CRESCENT-LOVELL	VIOLA	SHELL OIL COMPANY	19N	4W	31
51	3508336176	ABRAMS C	CRESCENT-LOVELL	WILCOX	MID-STATES DRILLING	19N	4W	32
52	3508321595	PROSSER	LOVELL SOUTHEAST	SIMPSON	REVIEW OIL & GAS INC	17N	3W	18
53	3508320771	SEEFELDT	CRESCENT-LOVELL	DOLOMITE / SIMPSON	LOBAR OIL COMPANY INCORPORATED	19N	4W	18
54	3508320896	GOODWIN	MARSHALL	WILCOX 1 / MISSISSIPPIAN / CLEVELAND	FUKSA INVESTMENTS INCORPORATED	19N	4W	19
55	3508320590	DEJARNETT	CRESCENT-LOVELL	VIRGIL / VIRGILIAN /	SOUTHWESTERN EXPLORATION CONSULTANTS	19N	4W	33
56	3508323382	BRIDAL	NAVINA EAST	WILCOX	HOLLRAH EXPLORATION COMPANY	15N	3W	6
57	3508321462	CRESCENT EAST LAYTON SAND UNIT	CRESCENT EAST	VIOLA / WILCOX / MISENER / MISSISSIPPIAN	DARNELL BOBBY J	17N	3W	17
58	3508323029	PAGE	PRAIRIE BELL NORTHWEST	MCLISH	INTERGY PRODUCTION LLC	15N	3W	31
59	3508323040	STALDER	CRESCENT-LOVELL	SIMPSON / VIOLA / MISSISSIPPIAN	C & A OIL COMPANY	19N	4W	31
60	3508321154	PAVEY	GUTHRIE LAKE EAST	VIOLA	ONEAL DRILLING COMPANY	15N	2W	9

Appendix A - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
61	3508320803	MULHALL MISENER UNIT	MULHALL SOUTH	MISENER	TREPCO PROD COMPANY INCORPORATED	18N	2W	10
62	3508335924	HOLMES DORA	COYLE SOUTH	WILCOX	ALTEX RESOURCES INCORPORATED	17N	1E	35
63	3508322438	TROUTT-MARSH	COYLE SOUTH	WILCOX / HUNTON	PEGASUS ENERGY CORPORATION	16N	1E	2
64	3508322408	FILTSCH	PLEASANT VALLEY SOUTHWEST	MISENER	MEADOWBROOK OIL	15N	2W	20
65	3508322532	TIBBITS	CRESCENT-LOVELL	WILCOX	SOUTHWESTERN EXPLORATION CONSULTANTS	17N	4W	3
66	3508300813	SHARP E G	LUCIEN	WILCOX	STILL A B	20N	2W	34
67	3508322917	VAVERKA	CRESCENT-LOVELL	WILCOX / VIOLA	POLK B R INCORPORATED	19N	4W	17
68	3508336143	SEBRANEK J	CRESCENT-LOVELL	WILCOX	SHELL OIL COMPANY	19N	4W	30

Appendix B – Oklahoma County Proposed Re-completions – Active Wells

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
1	3510920642	SMITH-GREER	EDMOND WEST	VIOLA	PEDESTAL OIL COMPANY INCORPORATED	14N	3W	20
2	3510920716	DAHL H J	EDMOND WEST	WILCOX	COOK OPERATING COMPANY	14N	3W	31
3	3510900665	HOMSEY	PRAIRIE BELL NORTH	MCLISH	FOUR-O-ONE INCORPORATED	14N	3W	20
4	3510900224	YOUNG J	EDMOND WEST	WILCOX	MID-CONTINENT PRODUCTION CORPORATION	14N	3W	31
5	3510937801	MESSER	EDMOND WEST	WILCOX	MARJO OPERATING COMPANY INCORPORATED	14N	3W	32
6	3510937695	BERNSTEIN	EDMOND WEST	WILCOX / DOLOMITE	KIRKPATRICK OIL COMPANY INCORPORATED	14N	3W	19
7	3510938075	REMUND	EDMOND WEST	VIOLA	BARON EXPLORATION COMPANY	14N	4W	24
8	3510920897	NEAL R D	HIGBEE NORTH	DOLOMITE / WILCOX / SIMPSON	MIJA LIMITED LIABILITY CORPORATION	14N	3W	17
9	3510920774	KUNC	PRAIRIE BELL EAST	SIMPSON	BARON EXPLORATION COMPANY	14N	3W	8
10	3510920671	MCGEE	EDMOND WEST	DOLOMITE / SIMPSON	TE-RAY RESOURCES INCORPORATED	14N	3W	30
11	3510920838	LEE	EDMOND NORTHEAST	VIOLA	C & L OIL & GAS CORPORATION	14N	2W	11
12	3510938121	DUNCAN-LLOYD	EDMOND NORTHEAST	WILCOX	PEDESTAL OIL COMPANY INCORPORATED	14N	2W	3
13	3510938120	JULIUS MARTIN	EDMOND NORTHEAST	HUNTON	PEDESTAL OIL COMPANY INCORPORATED	14N	2W	4
14	3510938050	ROSA	EDMOND NORTHEAST	HUNTON	PEDESTAL OIL COMPANY INCORPORATED	14N	2W	10
15	3510938019	MARTIN	EDMOND NORTHEAST	MCLISH	PEDESTAL OIL COMPANY INCORPORATED	14N	2W	15
16	3510922129	HICKMAN	EDMOND NORTHEAST	HUNTON	PEDESTAL OIL COMPANY INCORPORATED	14N	2W	9
17	3510920936	BROOKS	EDMOND NORTHEAST	WILCOX / VIOLA / CHECKERBOARD	C & L OIL & GAS CORPORATION	14N	2W	11
18	3510920935	BROOKS	EDMOND NORTHEAST	WILCOX / VIOLA / CHECKERBOARD	C & L OIL & GAS CORPORATION	14N	2W	11
19	3510920562	THOMAS	EDMOND NORTHEAST	HUNTON	PRENTICE NAPIER & GREEN	14N	2W	14
20	3510936382	CUTTING	LUTHER	HUNTON	CHAPARRAL ENERGY LIMITED LIABILITY C	14N	1E	14
21	3510936381	NORMAN	LUTHER	HUNTON	CHAPARRAL ENERGY LIMITED LIABILITY C	14N	1E	14
22	3510921480	TIPPEN	LUTHER	MISENER / HUNTON	SPECIAL ENERGY CORPORATION	14N	1E	14
23	3510920231	CHOCTAW MSNR SD UT	CHOCTAW	MISENER	INVESTMENT EQUIPMENT LTD LIABILITY C	12N	1W	23
24	3510920878	KOLB	WITCHER EAST	HUNTON	PONTOTOC PRODUCTION COMPANY INCORPOR	12N	2W	15
25	3510936954	WEGENER	WITCHER	BOIS D ARC	FOREMAN ENTERPRISES INCORPORATED	12N	2W	23
26	3510922127	AWACS	WITCHER	HUNTON	GLB EXPLORATION INCORPORATED	12N	2W	35
27	3510921955	MCCOY	WITCHER	HUNTON	YALE OIL ASSOCIATION INCORPORATED	12N	2W	14
28	3510937084	HARDCASTLE	OKLAHOMA CITY	WILCOX	CONOCOPHILLIPS COMPANY	11N	3W	22

Appendix B – Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
29	3510937123	EARPS ADDITION	OKLAHOMA CITY	WILCOX	BENT TWIG OIL COMPANY	11N	3W	22
30	3510937058	FOWLER A	OKLAHOMA CITY	WILCOX	WHITE OPER COMPANY	11N	3W	22
31	3510937027	WILLIAMS	OKLAHOMA CITY	SIMPSON	BENT TWIG OIL COMPANY	11N	3W	23
32	3510935306	ODERBRECHT A	OKLAHOMA CITY	WILCOX	WHITE OPER COMPANY	11N	3W	27
33	3510922142	OKC	OKLAHOMA CITY	ARBUCKLE	NEW DOMINION LIMITED LIABILITY CORP	11N	2W	30
34	3510935495	AINSWORTH	OKLAHOMA CITY	WILCOX	WHITE OPER COMPANY	11N	3W	10
35	3510937644	BAKER TOWNSEND	OKLAHOMA CITY	SIMPSON LOWER	BENT TWIG OIL COMPANY	11N	3W	1
36	3510936310	LUCAS	OKLAHOMA CITY	SCHOOL LAND	REDHEN OIL COMPANY	12N	3W	36
37	3510936264	PAGE-TUCKER	OKLAHOMA CITY	SIMPSON	BENT TWIG OIL COMPANY	12N	3W	35
38	3510935852	HOLDER B	OKLAHOMA CITY	SIMPSON	WHITE OPER COMPANY	11N	3W	2
39	3510921337	CASADY	BRITTON	WILCOX 1	GRAYHORSE OPERATING INCORPORATED	13N	3W	29
40	3510936454	OLLIE MEEKER D	BRITTON	MCLISH	GRAYHORSE OPERATING INCORPORATED	13N	3W	29
41	3510921337	CASADY	BRITTON	WILCOX	GRAYHORSE OPERATING INCORPORATED	13N	3W	29
42	3510921148	DAHR-OU	BRITTON	VIOLA	TOLAND-JOHNSTON	13N	3W	16
43	3510921127	OWENS	BRITTON	OIL CREEK	GRAYHORSE OPERATING INCORPORATED	13N	3W	29
44	3510921033	SINGER STATE	BRITTON	HUNTON	D C ENERGY INCORPORATED	13N	3W	16
45	3510920896	MEEKER G C	BRITTON	OIL CREEK	GRAYHORSE OPERATING INCORPORATED	13N	3W	29
46	3510938294	MCKEE FRANK	EDMOND WEST	HUNTON	THOMAS J L ENERGY INCORPORATED	14N	4W	23
47	3510921787	ESTELL	OKLAHOMA CITY	ARBUCKLE	NEW DOMINION LIMITED LIABILITY CORP	11N	2W	30
48	3510938294	MCKEE FRANK	EDMOND WEST	HUNTON	THOMAS J L ENERGY INCORPORATED	14N	4W	23
49	3510921787	ESTELL	OKLAHOMA CITY	ARBUCKLE	NEW DOMINION LIMITED LIABILITY CORP	11N	2W	30
50	3510900127	SHELTON HELEN	OKLAHOMA CITY	SCHOOL LAND	WHITE OPER COMPANY	12N	3W	26
51	3510921422	BOMBER #1	WITCHER	SKINNER LOWER /BASAL/	GLB EXPLORATION INCORPORATED	12N	2W	26

Appendix C - Cleveland County Proposed Re-completions – Active Wells

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
1	3502700207	WHITE JACK	CORN	BROMIDE	CHAPARRAL ENERGY LIMITED LIABILITY C	9N	3W	20
2	3502720429	BERRY	CORN	VIOLA	RESOURCES INVESTMENT CORPORATION	9N	3W	10
3	3502735952	ROSE GEORGE L	CORN DISTRICT	VIOLA	CHAPARRAL ENERGY LIMITED LIABILITY C	9N	3W	21
4	3502720403	CALVERT	CORN	HUNTON / VIOLA	MACK ENERGY COMPANY	9N	3W	9
5	3502735939	STATE	CORN	VIOLA	NORTHWEST OIL COMPANY	9N	3W	16
6	3502720956	REEVE RANCH	CORN	HUNTON	WARD PETROLEUM CORPORATION	9N	3W	5
7	3502720556	HUDSON	CORN	VIOLA / BROMIDE	QUESTAR EXPLORATION & PRODUCTION CO	9N	3W	18
8	3502720468	TRAVIS	CORN	VIOLA	JANUARY INVESTMENTS LLC	9N	3W	21
9	3502720360	WARD-PREBLE	CORN	VIOLA	JANUARY INVESTMENTS LLC	9N	3W	9
10	3502720323	HUCKABEE-BOGGS	CORN	VIOLA	WARD PETROLEUM CORPORATION	9N	3W	8
11	3502720024	HARRIS B	CORN	VIOLA	VEENKER RESOURCES INCORPORATED	9N	3W	29
12	3502700416	HARRIS RUBY	CORN	HUNTON	CHAPARRAL ENERGY LIMITED LIABILITY C	9N	3W	29
13	3502700266	ROBERTS EDNA	CORN	HUNTON	JOLEN OPERATING COMPANY	9N	3W	10
14	3502700204	MEADERS (NEHER)	CORN	VIOLA	JANUARY INVESTMENTS LLC	9N	3W	20
15	3502700152	SEITER JOE	NORMAN NORTH	TULIP CREEK / WILCOX	GRAND RESOURCES INCORPORATED	10N	2W	29
16	3502735320	MOSIER	NORMAN NORTH	DOLOMITE / SIMPSON	GRAND RESOURCES INCORPORATED	10N	2W	29
17	3502735355	HOWELL & B	NORMAN NORTH	DOLOMITE / SIMPSON	GRAND RESOURCES INCORPORATED	10N	2W	32
18	3502735247	STATE LAND #6	NORMAN NORTH	COMMINGLED	GRAND RESOURCES INCORPORATED	10N	2W	16
19	3502720081	GROSS	NORMAN NORTH	TULIP CREEK / WILCOX	CASILLAS PETROLEUM CORPORATION	10N	2W	22
20	3502735270	PEACHES	NORMAN NORTH	WILCOX	GRAND RESOURCES INCORPORATED	10N	2W	21
21	3502735265	MARVEL	NORMAN NORTH	WILCOX	CASILLAS PETROLEUM CORPORATION	10N	2W	21
22	3502735279	FRANKLIN A & B	NORMAN NORTH	HUNTON / MCLISH / OIL CREEK	GRAND RESOURCES INCORPORATED	10N	2W	21
23	3502750036	STUBBEMAN	NORMAN NORTH	SIMPSON	MARINO CHARLES B	10N	2W	34
24	3502735366	SWINNEY JOHN	NORMAN NORTH	DOLOMITE	JONES L E OPERATING INCORPORATED	10N	2W	33
25	3502735365	SWINNEY	NORMAN NORTH	DOLOMITE / SIMPSON	JONES L E OPERATING INCORPORATED	10N	2W	33
26	3502735363	TULLIUS ROSE	NORMAN NORTH	VIOLA	PRIME OPERATING COMPANY	10N	2W	32
27	3502735697	EASTEP	ALAMO	COMMINGLED	C & L OIL & GAS CORPORATION	7N	1W	9

Appendix C - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
28	3502700018	WILLIAMSON	ALAMO WEST	VIOLA	CHESAPEAKE OPERATING INCORPORATED	7N	2W	1
29	3502721315	NEMECEK	ALAMO SOUTHEAST	VIOLA	PROVEN RESERVES MANAGMENT INC	7N	1W	10
30	3502735692	SCHOCK B	ALAMO	WILCOX / DOLOMITE	C & L OIL & GAS CORPORATION	7N	1W	4
31	3502735696	HOSKINS	ALAMO	WILCOX / VIOLA	C & L OIL & GAS CORPORATION	7N	1W	9
32	3502721252	TRACY	ALAMO SOUTH	VIOLA	CHESAPEAKE OPERATING INCORPORATED	7N	1W	21
33	3502735695	EASTEP	ALAMO	SIMPSON / WILCOX	DEVON RESOURCES CORPORATION	7N	1W	9
34	3502735142	HOBGAUGH	NOBLE EAST	VIOLA	COMBINED RESOURCES CORPORATION	8N	1W	30
35	3502721304	MORRIS	WILLOW VIEW	VIOLA	EEC INCORPORATED	7N	1W	14
36	3502720899	TACKETT	NOBLE EAST	HUNTON / VIOLA	CHESAPEAKE OPERATING INCORPORATED	8N	2W	36
37	3502720842	HINKLE ALICE	ALAMO NORTHWEST	VIOLA	CHEROKEE ROYALTIES & MIN INCORPORATE	7N	1W	5
38	3502720839	FESSENBECK	ROCKY POINT SOUTH	BROMIDE 1	MARLIN OIL CORPORATION	8N	1W	32
39	3502700418	HOBGAUGH C E	NOBLE EAST	TULIP CREEK	QUESTAR EXPLORATION & PRODUCTION CO	8N	1W	30
40	3502700363	HINKLE A	ALAMO NORTHWEST	VIOLA	GREEN RIVER OPERATING COMPANY INC	7N	1W	5
41	3502720126	HIGHTOWER	MOORE WEST	TULIP CREEK	SEC PRODUCTION INCORPORATED	10N	3W	20
42	3502720126	HIGHTOWER	MOORE WEST	MCLISH	SEC PRODUCTION INCORPORATED	10N	3W	20
43	3502720217	KYSELA	MOORE WEST	VIOLA	CAPITOL WELL SERVICING COMPANY	10N	3W	19
44	3502720385	JENNETTA	MOORE WEST	HUNTON / VIOLA	CHESAPEAKE OPERATING INCORPORATED	10N	3W	30
45	3502720587	B-F	CORN	HUNTON	WENTWORTH OPER COMPANY	10N	3W	32
46	3502720596	B-F	CORN	HUNTON	WENTWORTH OPER COMPANY	10N	3W	32
47	3502720602	DOROTHY	CORN	COMMINGLED	JANUARY INVESTMENTS LLC	10N	3W	32
48	3502720862	DARROW	NORMAN NORTH	VIOLA	YALE OIL ASSOCIATION INCORPORATED	9N	2W	3
49	3502720862	DARROW	NORMAN NORTH	VIOLA	YALE OIL ASSOCIATION INCORPORATED	9N	2W	3
50	3502721055	ARGO	FALLS NORTHWEST	VIOLA	ARVINE RON OIL	9N	2W	11
51	3502721055	ARGO	FALLS NORTHWEST	VIOLA	ARVINE RON OIL	9N	2W	11
52	3502721242	SCHOOL LAND	HILL WEST	RED FORK	BECK RESOURCES INCORPORATED	10N	1E	16
53	3502721281	B & V ESTATES	HILL WEST	HUNTON	MEADOWBROOK OIL	10N	1E	9

Appendix C - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
54	3502721341	STATE	HILL WEST	HUNTON	FOUR SEAS EXPLORATION LLC	10N	1E	16
55	3502720511	DIVIS	MOORE WEST	VIOLA	VEENKER RESOURCES INCORPORATED	10N	3W	30
56	3502735469	DIVIS	MOORE WEST	HUNTON / VIOLA	GRAND RESOURCES INCORPORATED	10N	3W	30
57	3502700206	HARRIS EDGAR	MOORE WEST	COMMINGLED	PROSPECTIVE INVESTMENT & TRADING	10N	3W	29
58	3502700172	SCHOOL LAND	MOORE SOUTHEAST	SIMPSON / BARTLESVILLE	MEADOWBROOK OIL	10N	2W	36
59	3502735445	TUBBS	MOORE WEST	COMMINGLED	GRAND RESOURCES INCORPORATED	10N	3W	29
60	3502735471	STOTTS	MOORE WEST	WILCOX / HUNTON	CROW CREEK OPERATING LLC	10N	3W	30
61	3502700157	TURK	MOORE WEST	COMMINGLED	ORYX ENERGY COMPANY	10N	3W	29
62	3502735821	KUNC-ROBERTSON	MOORE SOUTHEAST	VIOLA	JAN OIL COMPANY	9N	1W	6
63	3502720989	O U	CORN SOUTH	ARBUCKLE	M-B OPERATING COMPANY INCORPORATED	9N	3W	24
64	3502720027	VALOUCH	NOBLE NORTHWEST	OIL CREEK / RED FORK	SOUTHERN RESOURCES	8N	2W	17
65	3502730091	OFFENBURGER	NOBLE NORTHWEST	OIL CREEK	HUGHES GAS SYSTEMS LLC	8N	2W	17
66	3502700235	VALOUCH N J	NOBLE NORTHWEST	TULIP CREEK / VIOLA / WILCOX 2 / RED FOR	HUGHES GAS SYSTEMS LLC	8N	2W	17

Appendix D - McClain County Proposed Re-completions – Active Wells

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
1	3502735961	WILEY	CORN	BOIS D ARC	ZEPYR OPERATING COMPANY LLC	9N	3W	30
2	3508700349	WILEY	CORN	BROMIDE	LAMBERT W E & HASLAM BOB	9N	3W	30
3	3508720913	BASS	LINDSAY RIDGE NORTH	TULIP CREEK / VIOLA	BLUE DOLPHIN PRODUCTION LLC	9N	4W	36
4	3508750006	KUNKEL	CORN	OIL CREEK / BROMIDE	LAMBERT W E & HASLAM BOB	9N	3W	31
5	3508721647	SMITH 1	NEWCASTLE NORTHEAST	HUNTON	GLB EXPLORATION INCORPORATED	9N	4W	1
6	3508721560	TROUT	CORN	HUNTON	SOUTHCREEK PETROLEUM COMPANY	9N	3W	7
7	3508721217	DUNNING	CORN	HUNTON	M-B OPERATING COMPANY INCORPORATED	9N	3W	31
8	3508721193	BOND	NEWCASTLE MIDDLE	CHIMNEYHILL	TREPCO PROD COMPANY INCORPORATED	9N	4W	11
9	3508721158	FOSTER	NEWCASTLE SOUTH	VIOLA	AMERICAN TRADING & PROD CORPORATION	9N	4W	26
10	3508721075	CHASTAIN	LINDSAY RIDGE NORTH	HUNTON	KLO	9N	4W	36
11	3508720996	FOSTER E A	CORN	VIOLA	GRIFFITH PETROLEUM SERVICES INC	9N	3W	30
12	3508720852	WILEY	CORN	HUNTON / VIOLA	DAVCO PRODUCTIONS INCORPORATED	9N	3W	30
13	3508720607	DOLESE	NEWCASTLE EAST	HUNTON	ELDER & VAUGHN	9N	4W	11
14	3508720376	DEAVILLE	NEWCASTLE NORTH	HUNTON / VIOLA	BOBWHITE PRODUCTION COMPANY INC	9N	4W	14
15	3508720008	DENNIS F	NEWCASTLE EAST	VIOLA	SOUTHCREEK PETROLEUM COMPANY	9N	4W	13
16	3508700032	SMITH	NEWCASTLE NORTHEAST	HUNTON	AZURE ENERGY LIMITED	9N	4W	1
17	3508735787	GILES-BROWN	WASHINGTON	VIOLA	HARMON C E OIL INCORPORATED	8N	3W	32
18	3508720075	LAMAR-DEGOYLER	WASHINGTON	VIOLA	HARMON C E OIL INCORPORATED	8N	3W	28
19	3508721153	MCBRIDE	WASHINGTON	BROMIDE / HUNTON	ENCANA OIL & GAS (USA) INCORPORATED	7N	3W	9
20	3508700203	COTTINGHAM	WASHINGTON	BROMIDE	HUNTON OIL & GAS CORPORATION	7N	3W	4
21	3508700139	DECORDOVA	WASHINGTON	MCLISH / BROMIDE	M-B OPERATING COMPANY INCORPORATED	8N	3W	35
22	3508700075	MCBROOM	WASHINGTON	TULIP CREEK / BROMIDE	M-B OPERATING COMPANY INCORPORATED	7N	3W	2
23	3508735850	FOLLIS A	WASHINGTON	BROMIDE	A & A TANK TRUCK COMPANY	7N	3W	11
24	3508735838	MCALLISTER 143	WASHINGTON	HUNTON	ENCANA OIL & GAS (USA) INCORPORATED	7N	3W	8
25	3508730057	COLE THERESA	WASHINGTON	BROMIDE	HUNTON OIL & GAS CORPORATION	7N	4W	2
26	3508721696	J J	WASHINGTON DISTRICT	HUNTON / VIOLA	OKLAND OIL COMPANY	7N	3W	11
27	3508721558	MCPHERSON	WASHINGTON	HUNTON	PROSPECTIVE INVESTMENT & TRADING	8N	3W	33
28	3508721555	WILLIAM DAVID	WASHINGTON	BROMIDE 1	CHESAPEAKE OPERATING INCORPORATED	7N	3W	16
29	3508721553	CLINKENBEARD	WASHINGTON	HUNTON	PROSPECTIVE INVESTMENT & TRADING	8N	3W	33
30	3508721546	NESTE-WARD	WASHINGTON	BROMIDE	CHESAPEAKE OPERATING INCORPORATED	7N	3W	2

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
31	3508721530	BENSON TRUST	WASHINGTON	OIL CREEK	CHAPARRAL ENERGY LIMITED LIABILITY C	7N	3W	11
32	3508721515	DAISY	WASHINGTON	HUNTON	CHESAPEAKE OPERATING INCORPORATED	7N	3W	6
33	3508721260	DENNIS GEO K	WASHINGTON	HUNTON / VIOLA	CHAPARRAL ENERGY LIMITED LIABILITY C	8N	4W	35
34	3508721070	CHASE	FREENY NORTH	VIOLA	DAVCO PRODUCTIONS INCORPORATED	8N	4W	23
35	3508721036	YVONNE	FREENY	VIOLA	DAVCO PRODUCTIONS INCORPORATED	8N	4W	26
36	3508721034	JAMES TRUST	WASHINGTON	HUNTON	CHESAPEAKE OPERATING INCORPORATED	7N	3W	16
37	3508720987	CHASE MANHATTEN	FREENY	VIOLA	DAVCO PRODUCTIONS INCORPORATED	8N	4W	26
38	3508720875	GOODRICH	WASHINGTON	OIL CREEK	EAGLE OIL & GAS	7N	3W	4
39	3508720793	LUCY	IRON CHAPEL NORTH	BROMIDE	DAVCO PRODUCTIONS INCORPORATED	7N	3W	19
40	3508720782	WOODS	WASHINGTON	BROMIDE	CHESAPEAKE OPERATING INCORPORATED	7N	4W	23
41	3508720780	LAMAR	WASHINGTON	HUNTON	BLUE STAR ENERGY	7N	3W	9
42	3508720617	LAMAR	WASHINGTON	HUNTON	SAND POINT PRODUCTION INCORPORATED	7N	3W	16
43	3508720358	ADKINS	FREENY	BROMIDE	TWT OPERATING COMPANY	8N	4W	26
44	3508720287	HARMON	WASHINGTON	HUNTON	HODGDEN JACK OPERATING COMPANY INC	7N	4W	14
45	3508720251	WHALEN	WASHINGTON	VIOLA	M-B OPERATING COMPANY INCORPORATED	7N	3W	2
46	3508700184	VIERSEN C-131	WASHINGTON	BOIS D ARC / CHIMNEYHILL	ENCANA OIL & GAS (USA) INCORPORATED	7N	3W	8
47	3508750004	BEALL C F	WASHINGTON	BROMIDE SECOND / OSBORN	LINDENMUTH & ASSOCIATES INCORPORATED	7N	4W	16
48	3508730012	BARNETT	DIBBLE SOUTHEAST	HUNTON	SAMSON RESOURCES COMPANY	7N	4W	34
49	3508721498	ROATH A	DIBBLE SOUTHEAST	HUNTON	SHOSHONE OIL & GAS INCORPORATED	7N	4W	28
50	3508721483	BUEHLER A	DIBBLE	MISENER / HUNTON	SHOSHONE OIL & GAS INCORPORATED	7N	4W	29
51	3508721479	HESTER A	WASHINGTON	MISENER-HUNTON	SHOSHONE OIL & GAS INCORPORATED	7N	4W	29
52	3508721243	HARMON	WASHINGTON	HUNTON / VIOLA	MACK ENERGY INCORPORATED	7N	4W	31
53	3508721211	DIBBLE	DIBBLE SOUTHEAST	HUNTON / SIMPSON / VIOLA	JANUARY INVESTMENTS LLC	7N	4W	31
54	3508721104	PAULK BILLY	DIBBLE SOUTHEAST	MISENER / HUNTON	PENNER ENERGY INCORPORATED	7N	4W	32
55	3508721088	KEELER	DIBBLE SOUTHEAST	MISENER-HUNTON	MAVERICK DRILLING COMPANY INCORPORAT	7N	4W	32
56	3508721065	SMITH WANDA	DIBBLE SOUTHEAST	HUNTON / VIOLA	MAVERICK DRILLING COMPANY INCORPORAT	7N	4W	32
57	3508721027	DIBBLE TOWNSITE	DIBBLE SOUTHEAST	MISENER-HUNTON / OSBORN	JANUARY INVESTMENTS LLC	7N	4W	33
58	3508720464	LOWRY	WASHINGTON	MISENER-HUNTON / OSBORN	PENNER ENERGY INCORPORATED	7N	4W	30
59	3508720255	ROATH A	DIBBLE SOUTHEAST	HUNTON	CHESAPEAKE OPERATING INCORPORATED	7N	4W	33
60	3508720250	GRAHAM C	DIBBLE SOUTHEAST	HUNTON	CHESAPEAKE OPERATING INCORPORATED	7N	4W	33

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
61	3508700041	MAYFIELD FRANK	WASHINGTON	BROMIDE	LINDENMUTH & ASSOCIATES INCORPORATED	7N	4W	16
62	3508735560	ARNER IRIS	GOLDEN TREND	HUNTON / VIOLA	SPESS OIL COMPANY	5N	4W	33
63	3508700370	COOK C W	GOLDEN TREND	BROMIDE 1 / BROMIDE 2 / TULIP CREEK U /	VEENKER RESOURCES INCORPORATED	5N	4W	35
64	3508700123	ETHERIDGE LEE	GOLDEN TREND	BROMIDE 1	MERIT ENERGY COMPANY	5N	4W	25
65	3508735481	ROBINSON A	GOLDEN TREND	HUNTON	CHESAPEAKE OPERATING INCORPORATED	5N	4W	22
66	3508700119	JONES C	GOLDEN TREND	CHIMNEYHILL	CHESAPEAKE OPERATING INCORPORATED	5N	4W	32
67	3508720616	HASSIE	GOLDEN TREND	HUNTON	PARDEE PRODUCTION COMPANY	5N	4W	31
68	3508720971	SCHONWALD D	GOLDEN TREND	VIOLA	CHESAPEAKE OPERATING INCORPORATED	5N	4W	29
69	3508720975	MORRIS	GOLDEN TREND	BROMIDE	ARBUCKLE ENTERPRISES INCORPORATED	5N	4W	31
70	3508750049	EWERT B	GOLDEN TREND	OIL CREEK	CHESAPEAKE OPERATING INCORPORATED	5N	4W	21
71	3508735565	W P THOMAS	GOLDEN TREND	CHIMNEYHILL	RANGE PRODUCTION COMPANY	5N	4W	33
72	3508735562	BURNS R L-A	GOLDEN TREND	COMMINGLED (MORE THAN THREE ZONES)	HEADINGTON OIL COMPANY LIMITED PARTN	5N	4W	33
73	3508735554	GOOCH B	GOLDEN TREND	HUNTON	CHESAPEAKE OPERATING INCORPORATED	5N	4W	32
74	3508735550	COFFEE D L	GOLDEN TREND	BROMIDE 1	MERIT ENERGY COMPANY	5N	4W	31
75	3508735540	JONES G	GOLDEN TREND	CHIMNEYHILL	WHITE OPER COMPANY	5N	4W	30
76	3508735539	JONES D	GOLDEN TREND	HUNTON	CHESAPEAKE OPERATING INCORPORATED	5N	4W	30
77	3508735536	SCHONWALD B	GOLDEN TREND	BROMIDE 1	CHESAPEAKE OPERATING INCORPORATED	5N	4W	29
78	3508735528	HARRIS I M	GOLDEN TREND	SYCAMORE	HUNTINGTON ENERGY LLC	5N	4W	26
79	3508735515	ETHERIDGE UNIT	GOLDEN TREND	CHIMNEYHILL	MERIT ENERGY COMPANY	5N	4W	25
80	3508735486	COCHRAN	GOLDEN TREND	OIL CREEK	PETROLEUM WASTE RECOVERY INCORPORATE	5N	4W	23
81	3508735483	VON WEDEL B	GOLDEN TREND	HUNTON	CHESAPEAKE OPERATING INCORPORATED	5N	4W	22
82	3508735478	ELSIE	GOLDEN TREND	VIOLA	OXY USA INC	5N	4W	22
83	3508735470	BROWN B	GOLDEN TREND	CHIMNEYHILL / BROMIDE 1	LITTLE QUINTIN COMPANY INCORPORATED	5N	4W	22
84	3508735469	BROCK	GOLDEN TREND	BROMIDE	VINTAGE PETROLEUM INCORPORATED	5N	4W	21
85	3508735468	VON WEDEL A	GOLDEN TREND	WOODFORD / BROMIDE 1	LITTLE QUINTIN COMPANY INCORPORATED	5N	4W	21
86	3508735464	GILL B	GOLDEN TREND	VIOLA	CHESAPEAKE OPERATING INCORPORATED	5N	4W	21
87	3508735459	HANEY UNIT	GOLDEN TREND	BROMIDE 1	JOLEN OPERATING COMPANY	5N	4W	20
88	3508735455	WARDWELL A	GOLDEN TREND	SYCAMORE	NEWFIELD EXPLORATION MID-CONTINENT I	5N	4W	19
89	3508735451	WALLACE-NUCKOLS UNIT	GOLDEN TREND	SYCAMORE	MERIT ENERGY COMPANY	5N	4W	18
90	3508735445	WEAVER UNIT	GOLDEN TREND	BROMIDE 2	RUFFEL L OIL & GAS CORPORATION	5N	4W	17

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
91	3508721671	BURNS #A-3	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	5N	4W	33
92	3508721645	SAMMY	GOLDEN TREND	VIOLA / BROMIDE	RUFFEL L OIL & GAS CORPORATION	5N	4W	35
93	3508721578	FRISCO	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	RUFFEL L OIL & GAS CORPORATION	5N	4W	28
94	3508721576	LOLA MAE	GOLDEN TREND	SIMPSON	RUFFEL L OIL & GAS CORPORATION	5N	4W	17
95	3508721550	WYNN	GOLDEN TREND	COMMINGLED (MORE THAN THREE ZONES)	SPARTAN RESOURCES	5N	4W	26
96	3508721531	LAVAE	GOLDEN TREND	VIOLA	TREPCO PROD COMPANY INCORPORATED	5N	4W	20
97	3508721529	FALLON	GOLDEN TREND	SIMPSON	BAKER BRENT OIL & GAS INCORPORATED	5N	4W	23
98	3508721524	OSBORN	GOLDEN TREND	WOODFORD / SYCAMORE	ENCORE OPERATING LIMITED PARTNERSHIP	5N	4W	20
99	3508721523	JOYCE	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	REDLAND RESOURCES INCORPORATED	5N	4W	34
100	3508721450	ETHRIDGE	GOLDEN TREND	BROMIDE 1	SPARTAN RESOURCES	5N	4W	24
101	3508721263	SMITH	GOLDEN TREND	SYCAMORE	CHESAPEAKE OPERATING INCORPORATED	5N	4W	17
102	3508721039	MARTIN	GOLDEN TREND	VIOLA	CONTINENTAL OPERATING COMPANY	5N	4W	27
103	3508720671	DESPAIN	GOLDEN TREND	BROMIDE	INTER-STATES OIL & GAS INCORPORATED	5N	4W	19
104	3508720635	SCHONWALD C	GOLDEN TREND	VIOLA / BROMIDE	CHESAPEAKE OPERATING INCORPORATED	5N	4W	29
105	3508700471	HARRIS	GOLDEN TREND	OIL CREEK / BROMIDE	LITTLE QUINTIN COMPANY INCORPORATED	5N	4W	34
106	3508700471	HARRIS	GOLDEN TREND	CHIMNEYHILL / SYCAMORE	LITTLE QUINTIN COMPANY INCORPORATED	5N	4W	34
107	3508700161	DACUS	GOLDEN TREND	BROMIDE / CHIMNEYHILL	CHESAPEAKE OPERATING INCORPORATED	5N	4W	29
108	3508700119	JONES C	GOLDEN TREND	BROMIDE	OXY USA INC	5N	4W	32
109	3508700049	MANNING	PAYNE	HUNTON	ELAND ENERGY INCORPORATED	5N	3W	10
110	3508700116	LOVE GLADYS	WAYNE SOUTHWEST	BROMIDE / HUNTON	HEADINGTON OIL COMPANY LIMITED PARTN	5N	2W	4
111	3508700051	PAYNE NORTH HUNTON UNIT	PAYNE	HUNTON	ELAND ENERGY INCORPORATED	5N	3W	16
112	3508750071	NITZELL J O & C E	WAYNE SOUTHWEST	HUNTON	LEED ENERGY LLC	5N	2W	7
113	3508735353	WEBB	PAYNE	HUNTON	VEENKER RESOURCES INCORPORATED	5N	3W	15
114	3508735307	LITTLE-SIMMONS UN	PAYNE	BROMIDE 2	AETHON I LIMITED PARTNERSHIP	5N	3W	4
115	3508735299	LITTLE JAMES H	PAYNE	BROMIDE / HUNTON	AETHON I LIMITED PARTNERSHIP	5N	3W	4
116	3508721636	GLENN MICKIE	ARNOLDVIEW	BROMIDE	CHESAPEAKE OPERATING INCORPORATED	5N	2W	21
117	3508721611	BASKETT	WILDCAT	VIOLA	HAZELWOOD PROD & EXPLORATION COMPANY	5N	2W	28
118	3508721604	WEBSTER	WILDCAT	BROMIDE 1	HAZELWOOD PROD & EXPLORATION COMPANY	5N	2W	28
119	3508721218	COX B	WAYNE SOUTHWEST	HART /GOLDEN TREND/	WALKER KEITH F OIL & GAS COMPANY LLC	5N	2W	17
120	3508720725	HARRIS	GOLDEN TREND	HUNTON	SOUTHCREEK PETROLEUM COMPANY	5N	3W	25

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
121	3508720546	WILLIAMS	WAYNE SOUTHWEST	VIOLA	NOBLE ENERGY INCORPORATED	5N	2W	18
122	3508720517	BELL	GOLDEN TREND	HUNTON	SOUTHCREEK PETROLEUM COMPANY	5N	3W	26
123	3508720079	SHADLE-BRANCY	GOLDEN TREND	BROMIDE 1	CHAPARRAL ENERGY LIMITED LIABILITY C	5N	3W	27
124	3508700197	ROBINSON H F	WAYNE SOUTHWEST	VIOLA	ARROW OIL & GAS INCORPORATED	5N	2W	8
125	3508700071	FOLLIS	GOLDEN TREND	HUNTON	TOKLAN OIL & GAS	5N	3W	34
126	3508700042	LITTLE	PAYNE	BROMIDE 1	MACK ENERGY COMPANY	5N	3W	4
127	3508700356	BAKER B	GIBBON SPUR NORTHEAST	MCLISH	FLINT ENTERPRISES INCORPORATED	7N	2W	14
128	3508735883	MARCUM W N UT	GIBBON SPUR NORTHEAST	MCLISH	SOUTHERN RESOURCES INCORPORATED	7N	2W	14
129	3508735895	SEWELL EMMA	GIBBON SPUR NORTHEAST	VIOLA	SOUTHERN RESOURCES INCORPORATED	7N	2W	23
130	3508730066	HUBBARD RUSSELL	GIBBON SPUR NORTHEAST	VIOLA	TEKENERGY INCORPORATED	7N	2W	24
131	3508730075	WOOD ROY	GIBBON SPUR NORTHEAST	VIOLA	SOUTHERN RESOURCES INCORPORATED	7N	2W	23
132	3508721613	DONAH0	GIBBON SPUR NORTHEAST	VIOLA	OKLAND OIL COMPANY	7N	2W	14
133	3508700030	DYER S K	GIBBON SPUR NORTHEAST	MARSHALL	SOUTHERN RESOURCES INCORPORATED	7N	2W	23
134	3508700043	HANLEY UNIT	PAYNE	HUNTON	MEADOWBROOK OIL	5N	3W	5
135	3508700078	START UNIT	CRINER NORTHEAST	BROMIDE / HUNTON	TOKLAN OIL & GAS	6N	3W	18
136	3508700092	PUGH	IRON CHAPEL SOUTHWEST	HUNTON	BLUE STAR ENERGY	6N	3W	6
137	3508700239	PYBAS BONNIE	IRON CHAPEL NORTHWEST	HUNTON	CONTINENTAL RESOURCES INCORPORATED	7N	3W	31
138	3508700279	HAWKINS	PAYNE	OIL CREEK	RAM ENERGY INCORPORATED	5N	3W	17
139	3508700279	HAWKINS	PAYNE	OIL CREEK	RAM ENERGY INCORPORATED	5N	3W	17
140	3508700316	WHITNEY	CURTY SOUTHEAST	VIOLA	OSBORN HEIRS COMPANY	5N	4W	10
141	3508700366	CRINER SW	CRINER SOUTHWEST	VIOLA	NEWFIELD EXPLORATION MID-CONTINENT I	6N	4W	35
142	3508720148	BAKER PERRY J	CRINER SOUTH	BROMIDE	PENNER ENERGY INCORPORATED	6N	4W	36
143	3508720224	ASBURY-CALVERT	IRON CHAPEL NORTHWEST	BROMIDE	CHESAPEAKE OPERATING INCORPORATED	7N	3W	31
144	3508720327	CRINER CHURCH	PAYNE	HUNTON UPPER	VEENKER RESOURCES INCORPORATED	6N	3W	17
145	3508720435	MOTTINGER	IRON CHAPEL	BROMIDE	HODGDEN JACK OPERATING COMPANY INC	6N	3W	5
146	3508720453	WELLS A	IRON CHAPEL	BROMIDE	CHAPARRAL ENERGY LIMITED LIABILITY C	6N	3W	6
147	3508720477	PYBAS	IRON CHAPEL NORTHWEST	VIOLA	BECK RESOURCES INCORPORATED	7N	3W	31
148	3508720801	BAXTER	PAYNE	HUNTON	LAUREL OPERATING COMPANY INCORPORATE	6N	3W	20
149	3508720936	CLINGMAN	PAYNE	HUNTON	ZEPYR OPERATING COMPANY LLC	5N	4W	12
150	3508721069	HALL	IRON CHAPEL NORTHWEST	BROMIDE	CALPINE NATURAL GAS LIMITED PARTNERS	7N	3W	33

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
151	3508721086	PETERS	PAYNE	BROMIDE	SPRING OPERATING COMPANY	5N	4W	2
152	3508721148	CARGO	IRON CHAPEL SOUTHEAST	BROMIDE	CALPINE NATURAL GAS LIMITED PARTNERS	6N	3W	4
153	3508721192	MARING	IRON CHAPEL SOUTHEAST	BROMIDE 2	CALPINE NATURAL GAS LIMITED PARTNERS	6N	3W	4
154	3508721200	MCKINNON JAMES A	PAYNE	HUNTON / VIOLA	KAISER-FRANCIS OIL COMPANY	6N	4W	25
155	3508721204	LUDLOW	IRON CHAPEL NORTHWEST	BROMIDE DENSE	GOMACO OPERATING COMPANY	7N	3W	33
156	3508721229	KATHLEEN	PAYNE	HART /GOLDEN TREND/	RAMSEY PROPERTY MANAGEMENT LLC	5N	3W	7
157	3508721229	KATHLEEN	PAYNE	SIMPSON	POST OAK OIL COMPANY	5N	3W	7
158	3508721313	BROWN	CURTY SOUTHEAST	BROMIDE 1	CONTINENTAL OPERATING COMPANY	5N	4W	3
159	3508721407	MCKINNON A	CRINER NORTHEAST	SIMPSON	ANADARKO PETROLEUM CORPORATION	6N	4W	25
160	3508721420	CRAIG	IRON CHAPEL SOUTHWEST	HUNTON	WESTERN OIL & GAS DEVELOPMENT CORP	6N	3W	7
161	3508721432	WEBB	IRON CHAPEL SOUTHWEST	HUNTON	WESTERN OIL & GAS DEVELOPMENT CORP	6N	3W	7
162	3508721451	ELVED	PAYNE	BROMIDE 2	WALKER KEITH F OIL & GAS COMPANY LLC	5N	3W	18
163	3508721451	ELVED	PAYNE	BROMIDE 2	WALKER KEITH F OIL & GAS COMPANY LLC	5N	3W	18
164	3508721459	LUTTRELL	PAYNE	TULIP CREEK / BROMIDE	WALKER KEITH F OIL & GAS COMPANY LLC	5N	3W	18
165	3508721463	JUNIOR	PAYNE	ARBUCKLE	WALKER KEITH F OIL & GAS COMPANY LLC	5N	3W	7
166	3508721477	GILBERT	CURTY SOUTHEAST	BROMIDE 1	WALKER KEITH F OIL & GAS COMPANY LLC	5N	4W	3
167	3508721533	MAYO	IRON CHAPEL SOUTHWEST	HUNTON	NOBLE ENERGY PRODUCTION INCORPORATED	6N	3W	7
168	3508721540	ROY	PAYNE	COMMINGLED (MORE THAN THREE ZONES)	SPARTAN RESOURCES	5N	4W	13
169	3508721599	HILL	PAYNE	VIOLA / SYCAMORE / HUNTON	BAKER BRENT OIL & GAS INCORPORATED	5N	4W	12
170	3508721602	ELVED	PAYNE	TRENTON	WALKER KEITH F OIL & GAS COMPANY LLC	5N	3W	18
171	3508721609	GUESSFORD	IRON CHAPEL SOUTHEAST	HUNTON	RUFFEL L OIL & GAS CORPORATION	6N	3W	8
172	3508721691	S & S RANCH INC	CRINER SOUTH	BROMIDE	KAISER-FRANCIS OIL COMPANY	5N	4W	2
173	3508721707	POWELL	CURTY SOUTHEAST	BROMIDE	RUFFEL L OIL & GAS CORPORATION	5N	4W	11
174	3508730060	EPISCOPAL ROYALTY	PAYNE	HUNTON	MOTT PETROLEUM CORPORATION	6N	3W	31
175	3508735438	PERRY	PAYNE	HUNTON	DAVCO PRODUCTIONS INCORPORATED	5N	4W	1
176	3508735599	START UNIT	CRINER NORTHEAST	HUNTON	TOKLAN OIL & GAS	6N	3W	18
177	3508735601	BAXTER-EWERT UT	PAYNE	HUNTON	MOTT PETROLEUM CORPORATION	6N	3W	19
178	3508735602	ALSUP	CRINER NORTHEAST	VIOLA	TOKLAN OIL & GAS	6N	3W	19
179	3508735608	BAXTER-SHARTEL	PAYNE	HUNTON	QUAIL CREEK OIL CORPORATION	6N	3W	20
180	3508735611	BAXTER CLAUDE	PAYNE	HUNTON	MOTT PETROLEUM CORPORATION	6N	3W	20

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
181	3508735670	PRATT	PAYNE	BOIS D ARC	TAPOIL INCORPORATED	6N	3W	29
182	3508735678	MILES	PAYNE	HUNTON	CASILLAS PETROLEUM CORPORATION	6N	3W	30
183	3508735682	BINGHAM GEO B	PAYNE	BROMIDE / HUNTON	WILLIFORD ENERGY COMPANY	6N	3W	32
184	3508750038	START UNIT	CRINER NORTHEAST	BROMIDE	TOKLAN OIL & GAS	6N	3W	18
185	3508750046	CRAWFORD UNIT	PAYNE	BOIS D ARC	POLK B R INCORPORATED	6N	3W	32
186	3508750086	REID R R	PAYNE	BOIS D ARC	PETRO ENGINEERING INCORPORATED	5N	3W	7
187	3508720285	BAKER	CRINER SOUTH	VIOLA	LAMBDIN WM H	5N	4W	1
188	3508720230	MOORE 1-29	IRON CHAPEL NORTHWEST	BROMIDE	CHESAPEAKE OPERATING INCORPORATED	7N	3W	29
189	3508700069	CRINER EAST BROMIDE SAND UNIT	PAYNE	BROMIDE 2 & 1	AETHON I LIMITED PARTNERSHIP	6N	3W	28
190	3508700028	VIERSEN	IRON CHAPEL SOUTHEAST	VIOLA	PENNER ENERGY INCORPORATED	6N	3W	8
191	3508735302	LITTLE JAMES H	PAYNE	BROMIDE / HUNTON	MACK ENERGY COMPANY	5N	3W	4
192	3508735675	AMBRISTER A	PAYNE	HUNTON	MEADOWBROOK OIL	6N	3W	29
193	3508700264	DEMPSEY-MANTOOTH	PAYNE	VIOLA	UNIT PETROLEUM COMPANY	5N	3W	17
194	3508735373	DEMPSEY-MANTOOTH	PAYNE	VIOLA	R B OPERATING COMPANY	5N	3W	17
195	3508735604	BAXTER CLAUDE	PAYNE	BROMIDE / HUNTON	SHIDLER MARK L INCORPORATED	6N	3W	20
196	3508735663	BINGHAM	PAYNE	BROMIDE / HUNTON	GRAND RESOURCES INCORPORATED	6N	3W	29
197	3508721281	DONAL	CRINER NORTHEAST	HUNTON / SIMPSON	PENNER ENERGY INCORPORATED	6N	3W	19
198	3508721248	MARY ANN	CRINER NORTHEAST	HUNTON	PENNER ENERGY INCORPORATED	6N	3W	19
199	3508721177	HARDAGE	CRINER NORTHEAST	BOIS D ARC / CHIMNEYHILL	DAVCO PRODUCTIONS INCORPORATED	6N	4W	25
200	3508721539	NEW ERA ROYALTIES	GOLDEN TREND	COMMINGLED (MORE THAN THREE ZONES)	SPARTAN RESOURCES	5N	4W	13
201	3508721488	TOMMY	PAYNE	COMMINGLED (MORE THAN THREE ZONES)	WALKER KEITH F OIL & GAS COMPANY LLC	5N	3W	6
202	3508721709	CYCLONE	GOLDSBY NORTH	HUNTON	ROX EXPLORATION INCORPORATED	8N	3W	13

Appendix E - Garvin County Proposed Re-completions – Active Wells

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
1	3504923052	MARY GRACE	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	TRIAD ENERGY INCORPORATED	4N	3W	33
2	3504922822	SPARKS	GOLDEN TREND	BOIS D ARC	TRIAD ENERGY INCORPORATED	4N	3W	27
3	3504923263	SHEEGOG	GOLDEN TREND	HUNTON	KAISER-FRANCIS OIL COMPANY	4N	3W	34
4	3504901968	DONNELL W K	GOLDEN TREND	BROMIDE / SIMPSON / VIOLA / GIBSON / PSL	MERIT ENERGY COMPANY	4N	3W	21
5	3504921386	BULLOCK	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	KAISER-FRANCIS OIL COMPANY	4N	3W	19
6	3504921930	CHANDLER-POWERS A	GOLDEN TREND	OIL CREEK LOWER	CHESAPEAKE OPERATING INCORPORATED	4N	3W	20
7	3504924324	WILD WEST	GOLDEN TREND	VIOLA	BAYS EXPLORATION INCORPORATED	3N	3W	4
8	3504924312	BULLOCK A-2	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	3W	19
9	3504924292	COLLER A-1	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	4N	4W	24
10	3504924243	MAURICE #A-3	GOLDEN TREND	BROMIDE / VIOLA / HUNTON / WOODFORD / SY	ANADARKO PETROLEUM CORPORATION	4N	3W	19
11	3504924111	WORK A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	3W	32
12	3504924092	CLAUDIA	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	TRIAD ENERGY INCORPORATED	4N	3W	31
13	3504923926	HARRILL	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	CIRRUS PRODUCTION COMPANY	4N	3W	33
14	3504923911	MAURICE A	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	3W	19
15	3504923759	MURRAY	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	CHESAPEAKE OPERATING INCORPORATED	4N	4W	26
16	3504923739	JOHNSON I	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	VINTAGE PETROLEUM INCORPORATED	4N	4W	36
17	3504923528	POWERS	GOLDEN TREND	VIOLA	TRIAD ENERGY INCORPORATED	4N	3W	31
18	3504923358	MILLER Y	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	NEWFIELD EXPLORATION MID CONTINENT I	4N	3W	32
19	3504923258	ELLITHORPE	GOLDEN TREND	CHIMNEYHILL / SYCAMORE	SAMSON RESOURCES COMPANY	4N	3W	29
20	3504923248	WEST	GOLDEN TREND	HUNTON / SPRINGER	TRIAD ENERGY INCORPORATED	3N	3W	4
21	3504923207	STREET D R	GOLDEN TREND	BOIS D ARC / HUNTON / SYCAMORE	XTO ENERGY INCORPORATED	4N	3W	22
22	3504923125	WEST	GOLDEN TREND	SYCAMORE / HUNTON	TRIAD ENERGY INCORPORATED	3N	3W	4
23	3504923117	DANIEL	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	3N	3W	5
24	3504923020	ANDERSON	GOLDEN TREND	VIOLA	TREPCO PROD COMPANY INCORPORATED	4N	3W	21
25	3504923016	MILLER (AM-1)	GOLDEN TREND	BOIS D ARC / SYCAMORE	FREMONT EXPLORATION INCORPORATED	4N	3W	32
26	3504923014	LILLY	GOLDEN TREND	HUNTON	MACK ENERGY COMPANY	4N	3W	28
27	3504922716	WORK	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	WARD PETROLEUM CORPORATION	4N	3W	29
28	3504922678	POWERS	GOLDEN TREND	BROMIDE 1	TREPCO PROD COMPANY INCORPORATED	4N	3W	20
29	3504922593	SHOEMAKE	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	WARD PETROLEUM CORPORATION	4N	3W	29
30	3504922565	WEST	GOLDEN TREND	SYCAMORE / HUNTON	TRIAD ENERGY INCORPORATED	3N	3W	4

Appendix E - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
31	3504922293	MOORE	GOLDEN TREND	OIL CREEK	CALPINE NATURAL GAS LIMITED PARTNERS	4N	3W	20
32	3504922238	STATE	GOLDEN TREND	HUNTON	TRIAD ENERGY INCORPORATED	4N	3W	27
33	3504922094	LEON	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	CRESCENT EXPLORATION LLC	4N	3W	29
34	3504922045	POWERS	GOLDEN TREND	HUNTON	CHESAPEAKE OPERATING INCORPORATED	4N	3W	20
35	3504922032	SIMPSON	GOLDEN TREND	HUNTON	WESTPORT OIL & GAS COMPANY INCORPORA	4N	3W	29
36	3504921870	NOBLE	GOLDEN TREND	CHIMNEYHILL	WESTPORT OIL & GAS COMPANY INCORPORA	4N	3W	31
37	3504921840	HARRILL	GOLDEN TREND	SYCAMORE	TRIAD ENERGY INCORPORATED	4N	3W	28
38	3504922706	SHARPE A	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	15
39	3504922998	BOLLES A	GOLDEN TREND	HUNTON / VIOLA	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	13
40	3504922878	DOCKHORN	GOLDEN TREND	HUNTON / VIOLA	CHAPARRAL ENERGY LIMITED LIABILITY C	3N	2W	19
41	3504922994	BUCKHULTZ MOLLIE	GOLDEN TREND	VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	23
42	3504921700	BRADSHAW A	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	3N	3W	26
43	3504922569	RUSSELL-STATE	GOLDEN TREND	CHIMNEYHILL	CRAWLEY PETROLEUM CORPORATION	3N	3W	36
44	3504922603	STONE E	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	27
45	3504922534	PORTER A	GOLDEN TREND	WOODFORD / HUNTON	ANADARKO PETROLEUM CORPORATION	3N	3W	35
46	3504901497	WALDRON	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	BAYS EXPLORATION INCORPORATED	3N	3W	9
47	3504923135	BROWN G A UT	GOLDEN TREND	BOIS D ARC / CHIMNEYHILL / SYCAMORE	BAYS EXPLORATION INCORPORATED	3N	3W	9
48	3504924173	SCRIVNER	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	MERIT ENERGY COMPANY	3N	3W	26
49	3504924165	ROLLER	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	26
50	3504924135	SANFORD D	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	10
51	3504924134	GRACE A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	10
52	3504924131	COLE ANNIE	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	36
53	3504924127	PAUL A	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	34
54	3504924125	MANATT	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	36
55	3504924123	HAMMER JACK	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	2W	31
56	3504924122	EXXON-PHILLIPS	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	2W	31
57	3504924119	JUANITA	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	2W	31
58	3504924118	CORNELL UNIVERSITY	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	2W	31
59	3504924093	BROOKSHER	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	CONTINENTAL OPERATING COMPANY	3N	3W	25
60	3504924091	TOMLINSON A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	26

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S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
61	3504924086	STEPHENS B	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	14
62	3504924083	STEPHENS C	GOLDEN TREND	VIOLA / HUNTON / WOODFORD	ANADARKO PETROLEUM CORPORATION	3N	3W	14
63	3504924078	STEPHENS E	GOLDEN TREND	VIOLA / HUNTON / WOODFORD	ANADARKO PETROLEUM CORPORATION	3N	3W	14
64	3504924075	REID	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	17
65	3504924074	STEPHENS D	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	14
66	3504924053	MCCASKILL A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD	ANADARKO PETROLEUM CORPORATION	3N	3W	24
67	3504924042	THOMPSON D	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	25
68	3504924028	TERRY A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	25
69	3504924023	TOMLISON A	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	26
70	3504924019	TERRY B	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	25
71	3504924013	RICHARDSON B	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	23
72	3504924008	RICHARDSON A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	23
73	3504923943	JANOVY B	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	33
74	3504923894	WALKER B	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	3N	3W	33
75	3504923891	CARTER	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	CHESAPEAKE OPERATING INCORPORATED	3N	3W	20
76	3504923873	JOE	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	CHESAPEAKE OPERATING INCORPORATED	3N	3W	28
77	3504923845	PAUL A	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	34
78	3504923399	SUMPTER FANNIE A	GOLDEN TREND	HUNTON / VIOLA	QUESTAR EXPLORATION & PRODUCTION CO	3N	2W	7
79	3504923318	DOCKHORN	GOLDEN TREND	HUNTON / VIOLA	CHAPARRAL ENERGY LIMITED LIABILITY C	3N	2W	19
80	3504923314	ALEXANDER	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	3N	3W	17
81	3504923292	KAY	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	3N	3W	16
82	3504923240	WARE	GOLDEN TREND	SYCAMORE / HUNTON	SAMSON RESOURCES COMPANY	3N	3W	9
83	3504923231	WILLIAMS	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	3N	3W	21
84	3504923213	PARR	GOLDEN TREND	HUNTON	GLA INCORPORATED	3N	3W	17
85	3504923195	POWERS	GOLDEN TREND	SYCAMORE / HUNTON	SAMSON RESOURCES COMPANY	3N	3W	8
86	3504923190	LOWERY	GOLDEN TREND	HUNTON / VIOLA	TRIAD ENERGY INCORPORATED	3N	2W	30
87	3504923118	CURTIS MERRICK UN	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	BAYS EXPLORATION INCORPORATED	3N	3W	15
88	3504923111	STEPHENS A	GOLDEN TREND	TULIP CREEK / BROMIDE	ANADARKO PETROLEUM CORPORATION	3N	3W	14
89	3504923091	HEARON	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	3N	3W	4
90	3504923083	HEFNER	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	6

Appendix E - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
91	3504923076	STEPHENS E	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	14
92	3504923066	STEPHENS D	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	14
93	3504923055	STEPHENS C	GOLDEN TREND	HUNTON / VIOLA	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	14
94	3504923032	NORVILL F	GOLDEN TREND	HUNTON	MERIT ENERGY COMPANY	3N	3W	24
95	3504922999	TOWNSEND C	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	23
96	3504922888	BONNEY W C UNIT	GOLDEN TREND	BOIS D ARC	ANADARKO PETROLEUM CORPORATION	3N	3W	23
97	3504922795	HENDERSON A	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	2W	31
98	3504922766	BROOKSHER	GOLDEN TREND	VIOLA	NEWFIELD EXPLORATION MID CONTINENT I	3N	2W	30
99	3504922730	PHOENIX	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	24
100	3504922707	ADAMS	GOLDEN TREND	VIOLA / HUNTON / BROMIDE	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	23
101	3504922686	KAY C	GOLDEN TREND	HUNTON / VIOLA	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	22
102	3504922683	GIBSON	GOLDEN TREND	HUNTON / VIOLA	WINDSOR ENERGY GROUP LLC	3N	2W	30
103	3504922677	PHOENIX A	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	24
104	3504922671	KAY MAGGIE	GOLDEN TREND	HUNTON / VIOLA	CONTINENTAL OPERATING COMPANY	3N	3W	24
105	3504922666	JENSEN	GOLDEN TREND	HUNTON	NORTHPORT PRODUCTION COMPANY	3N	3W	9
106	3504922644	TEMPLE	GOLDEN TREND	HUNTON	RAM ENERGY INCORPORATED	2N	2W	6
107	3504922630	WACKER G F	GOLDEN TREND	VIOLA	C & Y CASING PULLING COMPANY	2N	3W	2
108	3504922604	TOMLINSON A	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	27
109	3504922559	JUANITA	GOLDEN TREND	GIBSON	ANADARKO PETROLEUM CORPORATION	3N	2W	31
110	3504922553	GARDENHIRE	GOLDEN TREND	HUNTON / VIOLA	NEWFIELD EXPLORATION MID CONTINENT I	3N	3W	36
111	3504922545	RUSSELL-STATE	GOLDEN TREND	HUNTON	CRAWLEY PETROLEUM CORPORATION	3N	3W	36
112	3504922542	LAYTON LEE	GOLDEN TREND	HUNTON	D C ENERGY INCORPORATED	2N	2W	6
113	3504922539	MANATT	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	36
114	3504922467	COLE ANNIE	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	3N	3W	36
115	3504922226	DUNCAN	GOLDEN TREND	HUNTON	NORTHPORT PRODUCTION COMPANY	3N	3W	8
116	3504921976	WATSON	GOLDEN TREND	VIOLA	ELLITHORPE WILLIE & SANDRA	3N	2W	7
117	3504901515	ARNER	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	OXY USA INC	3N	3W	7
118	3504922672	KENNEDY B	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	2N	2W	8
119	3504923353	VOSE	GOLDEN TREND	VIOLA	M-B OPERATING COMPANY INCORPORATED	2N	3W	4
120	3504923179	HAMMER	GOLDEN TREND	HUNTON	HAMMER OIL COMPANY	2N	2W	21

Appendix E - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
121	3504923142	TERRY E	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	2N	2W	9
122	3504923137	LORENE	GOLDEN TREND	HUNTON	HAMMER OIL COMPANY	2N	2W	21
123	3504923109	NEAL	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	8
124	3504923085	TERRY D	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	9
125	3504923075	KENNEDY	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	8
126	3504923059	SAMEDAN	GOLDEN TREND	HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	16
127	3504923058	SAMEDAN	GOLDEN TREND	HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	16
128	3504923023	KENNEDY	GOLDEN TREND	HUNTON	WARREN AMERICAN OIL COMPANY	2N	2W	17
129	3504923019	GLOVER A	GOLDEN TREND	HUNTON	ANADARKO PETROLEUM CORPORATION	2N	3W	14
130	3504922988	AETNA	GOLDEN TREND	HUNTON	CRAWLEY PETROLEUM CORPORATION	2N	2W	29
131	3504922987	KENNEDY	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	VINTAGE PETROLEUM INCORPORATED	2N	2W	5
132	3504922843	SAMEDAN	GOLDEN TREND	HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	16
133	3504922839	TOMLINSON	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	8
134	3504922815	HARMON	GOLDEN TREND	HUNTON	CRAWLEY PETROLEUM CORPORATION	2N	2W	20
135	3504922788	NEAL	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	8
136	3504922783	WORDEN	GOLDEN TREND	HUNTON	RA-JAC INCORPORATED	2N	3W	12
137	3504922756	GARNER	GOLDEN TREND	HUNTON	CRAWLEY PETROLEUM CORPORATION	2N	2W	29
138	3504922629	TOMLINSON B	GOLDEN TREND	VIOLA / SYCAMORE / HUNTON	ANADARKO PETROLEUM CORPORATION	2N	2W	8
139	3504922623	BELL EDMOND M	GOLDEN TREND	HUNTON	C & Y CASING PULLING COMPANY	2N	3W	1
140	3504922619	WACKER G F	GOLDEN TREND	HUNTON	C & Y CASING PULLING COMPANY	2N	3W	2
141	3504922589	ROSE GEORGE L	GOLDEN TREND	HUNTON	ANADARKO PETROLEUM CORPORATION	2N	3W	2
142	3504922584	TIPPIT	GOLDEN TREND	HUNTON / VIOLA	ANADARKO PETROLEUM CORPORATION	2N	2W	6
143	3504922581	HAMON	GOLDEN TREND	VIOLA	M-B OPERATING COMPANY INCORPORATED	2N	3W	24
144	3504922136	THURMAN	GOLDEN TREND	HUNTON	WILDHORSE OPERATING COMPANY	2N	2W	5
145	3504900978	EOLA N FAULT BLOCK BRMD MCLS OLCK	EOLA-ROBBERSON	BROMIDE / MCLISH / OIL CREEK	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
146	3504936568	FORD F B	EOLA-ROBBERSON	HUNTON	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	7
147	3504935591	HARREL B	EOLA-ROBBERSON	HUNTON / VIOLA	GRUY PETROLEUM MANAGEMENT COMPANY	1N	3W	12
148	3504935584	MCKEY C E B	EOLA-ROBBERSON	BROMIDE LOWER	CITATION OIL & GAS CORPORATION	1N	3W	12
149	3504924213	COOK ELLA B	EOLA-ROBBERSON	MCSHU/MCLSH/OILCREEKLWER/ BRMIDELWER/BROM	GRUY PETROLEUM MANAGEMENT COMPANY	1N	3W	12
150	3504901017	COOK ELLA A	EOLA-ROBBERSON	MCLISH	D C ENERGY INCORPORATED	1N	3W	12

Appendix E - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
151	3504900454	HOUSE	EOLA-ROBBERTSON	HUNTON	CITATION OIL & GAS CORPORATION	1N	3W	2
152	3504920235	HART UNIT	EOLA-ROBBERTSON	MCLISH	CITATION OIL & GAS CORPORATION	1N	3W	13
153	3504920458	EOLA SE BROMIDE SAND UNIT	EOLA-ROBBERTSON	BROMIDE	CITATION OIL & GAS CORPORATION	1N	2W	20
154	3504950309	PICKETT UNIT B	EOLA-ROBBERTSON	BROMIDE	CITATION OIL & GAS CORPORATION	1N	2W	18
155	3504936589	HENTHORNE	EOLA-ROBBERTSON	VIOLA	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	7
156	3504936564	YEARLY	EOLA-ROBBERTSON	MCLISH / BROMIDE	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
157	3504936529	DUNLAP #2	EOLA-ROBBERTSON	HUNTON / WOODFORD / SYCAMORE	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	17
158	3504936528	PEASE C	EOLA-ROBBERTSON	BROMIDE / HUNTON	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	17
159	3504936525	SEBSU	EOLA-ROBBERTSON	HUNTON	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	17
160	3504936512	J E WHITEHEAD	EOLA-ROBBERTSON	BROMIDE	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
161	3504936511	TAYLOR	EOLA-ROBBERTSON	MCLISH UPPER	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
162	3504936511	TAYLOR	EOLA-ROBBERTSON	MCLISH UPPER	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
163	3504936434	TERRELL	EOLA-ROBBERTSON	BROMIDE / MCLISH / OIL CREEK	PRIME OPERATING COMPANY	1N	3W	4
164	3504935685	LEVY UNIT	EOLA-ROBBERTSON	OIL CREEK / BROMIDE	PRIME OPERATING COMPANY	1N	3W	10
165	3504930505	M C HENDERSON	EOLA-ROBBERTSON	BROMIDE / MCLISH	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
166	3504930505	M C HENDERSON	EOLA-ROBBERTSON	BROMIDE / MCLISH	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
167	3504924287	JARMAN #2	EOLA-ROBBERTSON	ARBUCKLE	CITATION OIL & GAS CORPORATION	1N	2W	19
168	3504924283	HARMON HEIRS 3-8	EOLA-ROBBERTSON	HUNTON / VIOLA / SYCAMORE	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
169	3504924261	HARRIS #2-8	EOLA-ROBBERTSON	HUNTON / SYCAMORE / WOODFORD / VIOLA	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
170	3504924249	CRYER 16#1	EOLA-ROBBERTSON	HUNTON / SYCAMORE / WOODFORD / VIOLA	EOG RESOURCES INCORPORATED	1N	2W	16
171	3504924196	MAYS #2-8	EOLA-ROBBERTSON	HUNTON / VIOLA / SYCAMORE	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
172	3504924144	WILLIAMS	EOLA-ROBBERTSON	ARBUCKLE	NEWKUMET EXPLORATION INCORPORATED	1N	2W	20
173	3504923901	FERGUSON	EOLA-ROBBERTSON	WOODFORD / SYCAMORE	D C ENERGY INCORPORATED	1N	3W	13
174	3504923485	SHIPLEY	EOLA-ROBBERTSON	MCLISH	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
175	3504923441	NEWBERRY-NEUSTADT	EOLA-ROBBERTSON	ARBUCKLE	DALE GEORGE	1N	3W	24
176	3504923257	DUTTON	EOLA-ROBBERTSON	BOIS D ARC / SYCAMORE	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	16
177	3504923149	HARMON HEIRS	EOLA-ROBBERTSON	BOIS D ARC	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
178	3504921996	NELL-MARIANNE	EOLA-ROBBERTSON	BROMIDE 2	WESTPORT OIL & GAS COMPANY INCORPORA	1N	3W	1
179	3504921960	FERGUSON	EOLA-ROBBERTSON	MCLISH UPPER	CASILLAS PETROLEUM CORPORATION	1N	2W	6
180	3504921878	FERGUSON G I	EOLA-ROBBERTSON	SYCAMORE	WESTPORT OIL & GAS COMPANY INCORPORA	1N	3W	3

Appendix E - Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
181	3504921395	FERGUSON	EOLA-ROBBERSON	MCLISH	CASILLAS PETROLEUM CORPORATION	1N	3W	1
182	3504921323	MONTGOMERY	EOLA-ROBBERSON	OIL CREEK	CASILLAS PETROLEUM CORPORATION	1N	2W	6
183	3504921232	FERGUSON	EOLA-ROBBERSON	MCLISH	CASILLAS PETROLEUM CORPORATION	1N	3W	1
184	3504921173	EWERT	GOLDEN TREND	BROMIDE 2	RAM ENERGY INCORPORATED	2N	3W	36
185	3504920650	HARRELL A	EOLA-ROBBERSON	HUNTON	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	7
186	3504920566	RINGER WOOD	EOLA-ROBBERSON	BROMIDE	DOMINION OKLAHOMA TEXAS EXPL & PROD	1N	3W	10
187	3504920523	COOK	EOLA-ROBBERSON	MCLISH	CASILLAS PETROLEUM CORPORATION	1N	2W	6
188	3504920296	RINGER UNIT B	EOLA-ROBBERSON	MCLISH / BROMIDE	CITATION OIL & GAS CORPORATION	1N	3W	13
189	3504920164	BULLARD	EOLA-ROBBERSON	WOODFORD / SYCAMORE	D C ENERGY INCORPORATED	1N	3W	13
190	3504901963	CASSELL	EOLA	BROMIDE / MCLISH	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
191	3504901952	STORY UNIT	EOLA-ROBBERSON	VIOLA	CITATION OIL & GAS CORPORATION	1N	2W	18
192	3504901016	HOWARD D2	EOLA-ROBBERSON	HUNTON / VIOLA	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	18
193	3504900978	SHIPLEY #2	EOLA-ROBBERSON	HUNTON / VIOLA	GRUY PETROLEUM MANAGEMENT COMPANY	1N	2W	8
194	3504923303	NATALIE	GOLDEN TREND	SENORA / VIOLA	LITTLE QUINTIN COMPANY INCORPORATED	4N	4W	2
195	3504901938	MCDANIEL	GOLDEN TREND	VIOLA	POLK B R INCORPORATED	4N	4W	12
196	3504921690	CASON	GOLDEN TREND	HUNTON / SPRINGER	DOMINION OKLAHOMA TEXAS EXPL & PROD	4N	4W	8
197	3504922414	DONNELL	GOLDEN TREND	VIOLA / SYCAMORE	HEMSTEAD OIL CORPORATION	4N	3W	16
198	3504901938	MCDANIEL	GOLDEN TREND	HUNTON	POLK B R INCORPORATED	4N	4W	12
199	3504938007	MCDANIEL-ELLISON	GOLDEN TREND	MCLISH / VIOLA / HUNTON / SYCAMORE	BP AMERICA PRODUCTION COMPANY	4N	4W	12
200	3504938678	CASON A	GOLDEN TREND	HUNTON	BETTIS BOYLE & STOVALL	4N	3W	18
201	3504938926	SMITH LEE	GOLDEN TREND	CHIMNEYHILL	MERIT ENERGY COMPANY	4N	3W	5
202	3504950263	DONNELL	GOLDEN TREND	VIOLA	STREAMLINE	4N	4W	2
203	3504938550	WINN-LEE	GOLDEN TREND	CHIMNEYHILL	CALPINE NATURAL GAS LIMITED PARTNERS	4N	3W	8
204	3504922380	WALTON	GOLDEN TREND	HUNTON	STREAMLINE	4N	4W	9
205	3504938642	BROWN K	GOLDEN TREND	BROMIDE 2 / BROMIDE 3	XTO ENERGY INCORPORATED	4N	3W	16
206	3504900873	LACY CLARENCE	GOLDEN TREND	BROMIDE / HUNTON	BAYS EXPLORATION INCORPORATED	4N	3W	5
207	3504923064	SCHWARTZ	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	TRIAD ENERGY INCORPORATED	4N	4W	17
208	3504950240	T E MCNEER #4	GOLDEN TREND	BROMIDE / CHIMNEYHILL	VINTAGE PETROLEUM INCORPORATED	4N	3W	17
209	3504938924	FRANKENBERG E	GOLDEN TREND	BROMIDE 1	BETTIS BOYLE & STOVALL	4N	3W	5
210	3504938917	EVA LEE WINN	GOLDEN TREND	HUNTON	CHAMPLIN EXPLORATION INCORPORATED	4N	3W	5

Appendix E – Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
211	3504938534	FRANKENBERG	GOLDEN TREND	MCLISH	MERIT ENERGY COMPANY	4N	3W	7
212	3504938527	MARTIN HARRISON	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	MERIT ENERGY COMPANY	4N	3W	6
213	3504938522	FRANKENBURG UNIT	GOLDEN TREND	CHIMNEYHILL	WARD PETROLEUM CORPORATION	4N	3W	6
214	3504938519	FRANKENBURG-HINKLE	GOLDEN TREND	BROMIDE 3	MERIT ENERGY COMPANY	4N	3W	6
215	3504938017	LINDSAY UNIT	GOLDEN TREND	BROMIDE 2	POLK B R INCORPORATED	4N	4W	13
216	3504937927	FRANKENBERG C B	GOLDEN TREND	HUNTON	MERIT ENERGY COMPANY	4N	4W	1
217	3504924444	BLOOMFIELD A	GOLDEN TREND	WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	10
218	3504924425	EWERT B	GOLDEN TREND	VIOLA / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	15
219	3504924411	WILLIAMSON A	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	16
220	3504924305	CUNNINGHAM 1	GOLDEN TREND	BROMIDE 1	POLK B R INCORPORATED	4N	4W	13
221	3504924285	RILEY	GOLDEN TREND	HUNTON / SYCAMORE / WOODFORD / VIOLA	ANADARKO PETROLEUM CORPORATION	4N	3W	18
222	3504924238	RILEY A-4-18	GOLDEN TREND	BROMIDE / VIOLA / HUNTON / WOODFORD / SY	ANADARKO PETROLEUM CORPORATION	4N	3W	18
223	3504924230	BELL C-2-13	GOLDEN TREND	HUNTON / VIOLA / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	13
224	3504924209	JARRELL A 3	GOLDEN TREND	BROMIDE / VIOLA / HUNTON / WOODFORD / SY	ANADARKO PETROLEUM CORPORATION	4N	4W	5
225	3504924198	MARTIN RANCH	GOLDEN TREND	OIL CREEK	NEWFIELD EXPLORATION MID CONTINENT I	4N	4W	1
226	3504924190	MARTIN RANCH 14-1	GOLDEN TREND	BROMIDE	NEWFIELD EXPLORATION MID CONTINENT I	4N	4W	1
227	3504924172	RIVER BEND	GOLDEN TREND	SIMPSON	BAYS EXPLORATION INCORPORATED	4N	3W	16
228	3504924163	RUTHIE	GOLDEN TREND	VIOLA / BROMIDE	CHESAPEAKE OPERATING INCORPORATED	4N	4W	7
229	3504924148	HARRISON INVESTMENT	GOLDEN TREND	BROMIDE 1	BAYS EXPLORATION INCORPORATED	4N	4W	1
230	3504924068	BROWN K	GOLDEN TREND	BROMIDE 3	XTO ENERGY INCORPORATED	4N	3W	16
231	3504924066	MILLER C	GOLDEN TREND	CHIMNEYHILL / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	6
232	3504924065	SHEWOLF	GOLDEN TREND	VIOLA	RUFFEL L OIL & GAS CORPORATION	4N	3W	9
233	3504924041	SHAWSHEE	GOLDEN TREND	MCLISH	RUFFEL L OIL & GAS CORPORATION	4N	3W	9
234	3504923908	RILEY A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	3W	18
235	3504923895	BLOOMFIELD A	GOLDEN TREND	VIOLA / HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	10
236	3504923712	REIGER	GOLDEN TREND	VIOLA	STREAMLINE	4N	3W	15
237	3504923533	VAN BEBBER	GOLDEN TREND	SYCAMORE / HUNTON	ADA OIL EXPLORATION CORPORATION	4N	4W	11
238	3504923475	ROGERS	GOLDEN TREND	HUNTON	RUFFEL L OIL & GAS CORPORATION	4N	4W	11
239	3504923461	BELL E	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	13
240	3504923451	SEE	GOLDEN TREND	HUNTON	CHESAPEAKE OPERATING INCORPORATED	4N	4W	13

Appendix E – Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
241	3504923421	BURFORD A	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	ANADARKO PETROLEUM CORPORATION	4N	4W	7
242	3504923384	CHESNUT	GOLDEN TREND	HUNTON	DOMINION OKLAHOMA TEXAS EXPL & PROD	4N	4W	9
243	3504923364	BRANCH	GOLDEN TREND	HUNTON	VINTAGE PETROLEUM INCORPORATED	4N	4W	14
244	3504923359	NEWBY	GOLDEN TREND	HUNTON	RUFFEL L OIL & GAS CORPORATION	4N	4W	14
245	3504923351	MCDANIEL	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	4N	4W	11
246	3504923331	LEWIS	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	4N	4W	14
247	3504923304	LINDSAY	GOLDEN TREND	HUNTON	SAMSON RESOURCES COMPANY	4N	4W	14
248	3504923274	LAMBERT	GOLDEN TREND	VIOLA / SYCAMORE	RUFFEL L OIL & GAS CORPORATION	4N	4W	2
249	3504922370	COFIELD-FALLON	GOLDEN TREND	BROMIDE	POLK B R INCORPORATED	4N	4W	4
250	3504922242	FALLON UNIT	GOLDEN TREND	BROMIDE	POLK B R INCORPORATED	4N	4W	4
251	3504922119	WILLIAMS	GOLDEN TREND	VIOLA / BROMIDE 1	CHESAPEAKE OPERATING INCORPORATED	4N	4W	9
252	3504922029	MANTOOTH	GOLDEN TREND	VIOLA	ARROW ENERGY INCORPORATED	4N	3W	11
253	3504922010	CASON LEN	GOLDEN TREND	HUNTON	WESTPORT OIL & GAS COMPANY INCORPORA	4N	4W	6
254	3504921809	BLOOMFIELD	GOLDEN TREND	VIOLA	CHESAPEAKE OPERATING INCORPORATED	4N	4W	9
255	3504921669	HART	GOLDEN TREND	VIOLA	WALSH HOWARD F JR	4N	3W	4
256	3504921557	BURFORD	GOLDEN TREND	HUNTON	WESTPORT OIL & GAS COMPANY INCORPORA	4N	4W	6
257	3504921546	HART	GOLDEN TREND	VIOLA	WALSH HOWARD F JR	4N	3W	4
258	3504921528	SMITH	GOLDEN TREND	BROMIDE	HODGDEN JACK OPERATING COMPANY INC	4N	4W	13
259	3504921441	T E MCNEER #6	GOLDEN TREND	BROMIDE	VINTAGE PETROLEUM INCORPORATED	4N	3W	17
260	3504921254	MANTOOTH	GOLDEN TREND	BROMIDE 1	ARROW ENERGY INCORPORATED	4N	3W	11
261	3504921190	JONES ENTERPRISES	GOLDEN TREND	VIOLA	MARLER HAROLD & ALFREDA	4N	3W	3
262	3504900488	MYERS	GOLDEN TREND	MCLISH / BROMIDE	MERIT ENERGY COMPANY	4N	3W	7
263	3504900174	MARTIN ROSE	GOLDEN TREND	HUNTON	BP AMERICA PRODUCTION COMPANY	4N	4W	1
264	3504939024	ROGERS HAROLD L	GOLDEN TREND	BROMIDE	RA-JAC INCORPORATED	4N	2W	15
265	3504939021	MCDANIEL GRACE	GOLDEN TREND	BROMIDE	BAYS EXPLORATION INCORPORATED	4N	2W	15
266	3504939030	MAYS HEIRS	GOLDEN TREND	BROMIDE	HUNTON OIL & GAS CORPORATION	4N	2W	16
267	3504939023	BALENTINE MCDANIEL	MAYSVILLE	VIOLA	BAYS EXPLORATION INCORPORATED	4N	2W	15
268	3504939020	MAYS-LEDGERWOOD	GOLDEN TREND	BROMIDE LOWER	WILKINS L L & E COMPANY	4N	2W	15
269	3504938998	DAVENPORT-RICHESON	GOLDEN TREND	BROMIDE 1	QUESTAR EXPLORATION & PRODUCTION CO	4N	2W	10
270	3504921686	RITCHESON	GOLDEN TREND	BROMIDE	DALE GEORGE	4N	2W	10

Appendix E – Continued

S/N	API Number	Lease Name	Field Name	Current Producing Formation	Operator Name	Township	Range	Section
271	3504920884	SPIRIT OF 76	MAYSVILLE	BROMIDE	RA-JAC INCORPORATED	4N	2W	15
272	3504920660	JANE ROYALTY	ROBBERSON SOUTHEAST	SIMPSON	R & D OIL COMPANY	1N	2W	31
273	3504900598	PRINCE	ROBBERSON SOUTHEAST	ARBUCKLE	DEANS WELL SERVICING INCORPORATED	1N	2W	32
274	3504936466	DAVENORT-CANADA	ROBBERSON SOUTHEAST	BROMIDE	R & D OIL COMPANY	1N	2W	31
275	3504924293	EASTEP 2-32	ROBBERSON SOUTHEAST	ARBUCKLE	DEHART COMPANY THE-A PARTNERSHIP	1N	2W	32
276	3504924266	EASTEP 1-32	ROBBERSON SOUTHEAST	ARBUCKLE	DEHART COMPANY THE-A PARTNERSHIP	1N	2W	32
277	3504923866	MCCONNELL	SHO-VEL-TUM	WOODFORD / SYCAMORE	CHESAPEAKE OPERATING INCORPORATED	1N	3W	27
278	3504924020	MARY SUE	GOLDEN TREND	HUNTON / WOODFORD / SYCAMORE	CHESAPEAKE OPERATING INCORPORATED	3N	3W	7
279	3504922508	HOWARD	PAULS VALLEY WEST	VIOLA	SOUTHERN RESOURCES INCORPORATED	4N	1W	21
280	3504922356	SPANN	PAULS VALLEY WEST	VIOLA	NORTHPORT PRODUCTION COMPANY	4N	1W	21
281	3504922364	STEWART	PAOLI SOUTHWEST	VIOLA	NORTHPORT PRODUCTION COMPANY	4N	1W	22
282	3504922176	WOODS	PAOLI SOUTHWEST	VIOLA	NORTH BOUND EXPLORATION COMPANY	4N	1W	16
283	3504920705	PETERS	PAULS VALLEY WEST	BROMIDE	PAPAL ENTERPRISES INCORPORATED	4N	1W	28
284	3504924183	WHITEBEAD NORTH	PAULS VALLEY WEST	BROMIDE	ARROW OPERATING COMPANY INCORPORATED	4N	1W	29
285	3504924417	WHITEBEAD	PAULS VALLEY WEST	VIOLA	RANKEN ENERGY CORPORATION	4N	1W	29
286	3504924451	DENSMORE	PAULS VALLEY WEST	VIOLA	RANKEN ENERGY CORPORATION	4N	1W	28
287	3504939252	HATCHER C	PAULS VALLEY WEST	BROMIDE 2	STEPHENS & JOHNSON OPERATING COMPANY	4N	1W	28
288	3504939181	BUTTRAM	PAULS VALLEY WEST	BROMIDE 1	OXY USA INC	4N	1W	21
289	3504920350	PETERS	PAULS VALLEY WEST	BROMIDE	BREWER CARROLL L	4N	1W	28
290	3504923465	BRAY	GOLDEN TREND	BROMIDE	CHESAPEAKE OPERATING INCORPORATED	4N	4W	22

Appendix F - Production Profiles for each County

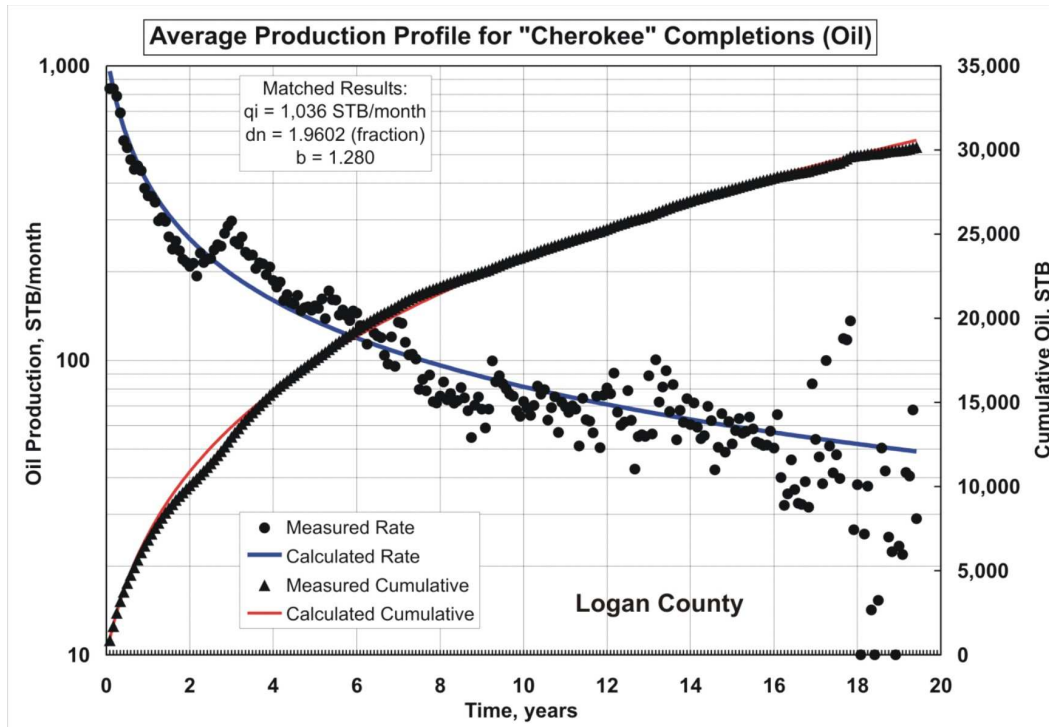


Figure 20. Production profile for completions within the Cherokee formations in Logan County

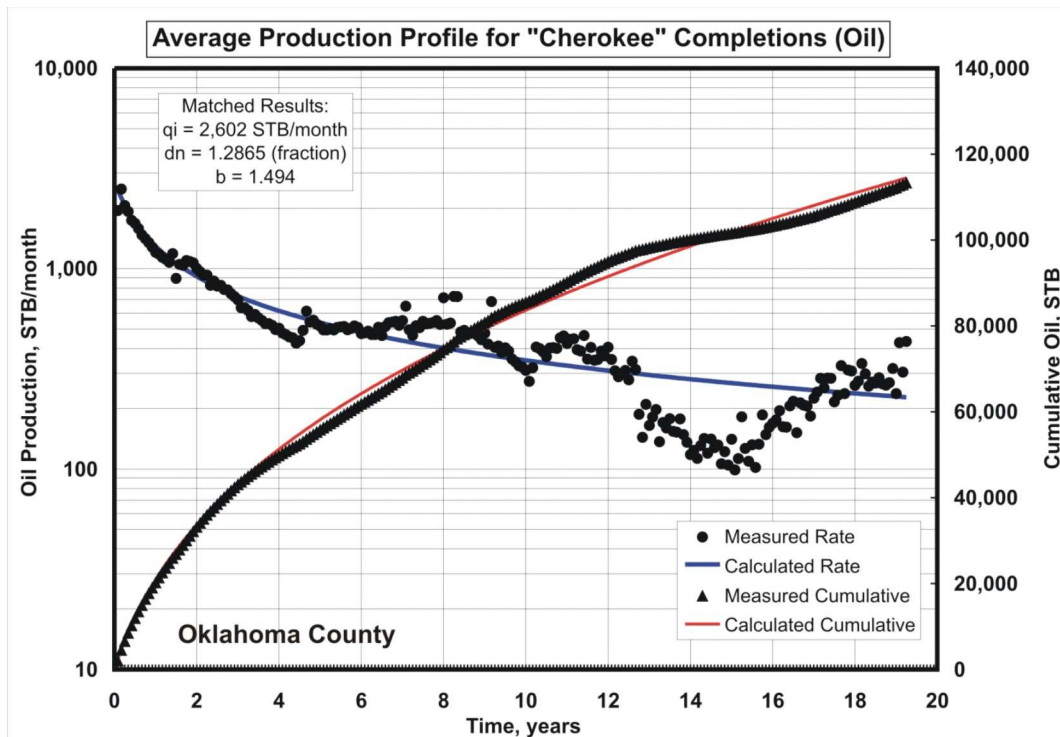


Figure 21. Production profile for completions within the Cherokee formations in Oklahoma County

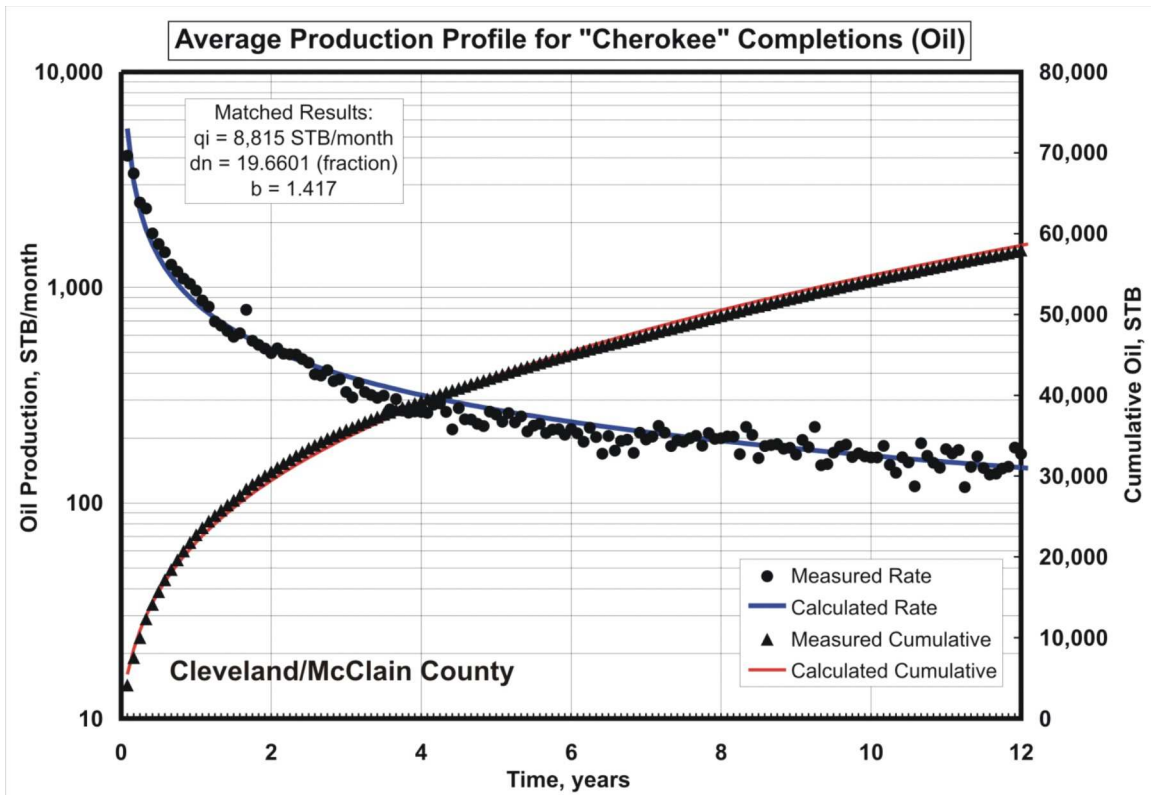


Figure 22. Production profile in the Cherokee formations in Cleveland and McClain Counties

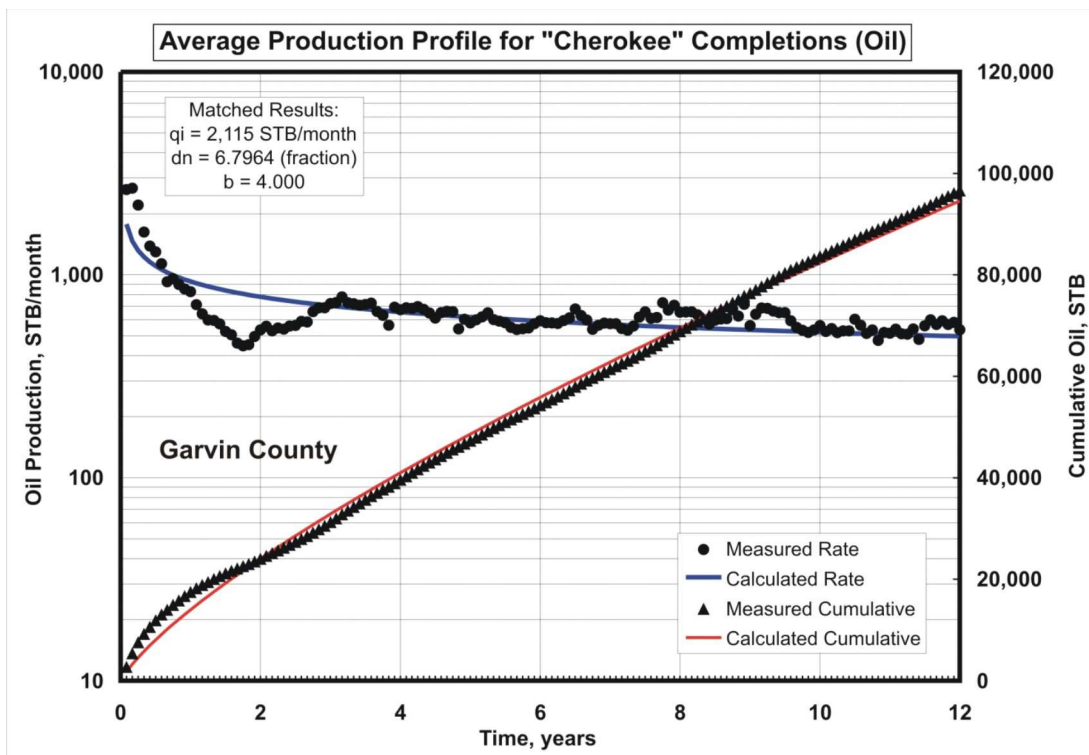


Figure 23. Production profile in the Cherokee formations - Garvin County